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ORIGINAL ARTICLES.

THE TREATMENT OF SUPPURATION WITHIN THE FEMALE PELVIS.

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I HAVE used the above caption in order to include all cases of suppuration, whether arising as the result of pelvic hæmatocele or that following inflammatory conditions of the tubes or cellular tissue. I do so in order to illustrate a principle in the treatment which I considered a great advance on that usually adopted, and one that has not yet received that attention to which it is entitled.

Turning first to abscess of the ovary and pyosalpinx, one cannot but be struck with the frequency of their occurrence. These are found in all ages from puberty on. How frequently they do occur has not yet been definitely determined, but sufficient evidence has been produced to show that they occur much more often than is generally believed, for large quantities of pus may lie in the ovary or tubes without producing any marked symptoms. As proof of my statement, I may only refer to the investigations of such men as Gregg, Fowler, and Lewars. The latter, after a careful investigation of one hundred consecutive deaths in women from all causes, found that no less than seventeen had had pyosalpinx. Of this number eight deaths were attributable directly to this condition.

It is not my desire to spend much time in consideration of the treatment of these two conditions, for the almost universal consensus of opinion in the profession is in favor of abdominal section, but will pass on to that of pelvic abscess proper. As there is a lack of opinion on the proper treatment in this disease, I will devote the balance of my paper to this important matter. As a preface, and speaking in general, there is no class of disease more unsatisfactory to treat nor more unfortunate to the patient than a pelvic abscess that has burrowed along a tortuous course and ruptured into the vagina, rectum, or bladder. This statement can be followed up with a parallel one equally true, that no class of disease which the gynecologist meets is more amenable to treatment than a pelvic abscess, providing it is taken before rupture and the formation of sinuses takes place; nor is there one to which he can insure more permanent relief.

Much discussion has taken place upon this important subject, because of its frequency and the evil consequences that often follow it. The views, I may say warnings, so persistently, but none too urgently, expressed, are becoming more generally recognized every day: and the claim that physicians delay too long in recommending surgical interference in many classes of female complaints, is in few of these more clearly justified than when a woman has a quantity of pus in her pelvis. Not only is there a great risk to life, but when deep and irregular sinuses take place, all lines of treatment become much more unsatisfactory and complicated. Occasionally, when the pus cavity ruptures it heals spontaneously, and the patient soon regains her health. This result is fortunate and much to be desired, for the number that rupture and periodically fill and discharge their contents, and continue as fistulous openings, is altogether too numerous.

Barring operations upon the vagina, cervix, or uterus—too often the starting-points of inflammatory conditions—I have long maintained, and recent events have added to the conviction, that in the history of a pelvic abscess, from an inflammatory cause, there are two periods in the treatment that call urgently for all the care and judgment of the physician, in order to prevent the catalysis that may occur. The first is, when sero-fibrinous exudations of lymph are thrown out, to cause a reabsorption, and thereby to avoid the formation of pus altogether. The second is, when the first object cannot be attained and the formation of pus goes beyond absorption, to have it evacuated by artificial means before it ruptures into some outlet, causing tortuous and irregular sinuses that will probably go on discharging for months or even years. When a severe attack of pelvic peritonitis, or so-called cellulitis, takes place about the third or fourth day after the onset of pain and fever, sero-albuminous and sero-fibrinous exudations are thrown out which can be detected by vaginal or abdominal examination. This exudation has at first a soft, almost boggy or doughy feeling, but afterward becomes much harder. In general, its size and extent will correspond to the severity of the attack. Not unfrequently all the cellular tissue, together with the tubes and ovaries, will be involved. It is at this stage of the process that much can be accomplished by careful and judicious treatment. The grand aim and object should be to aid in the

absorption of this exudation of serum, so that none may be left to cause the formation of pus. During this state perfect and absolute rest should be enjoined. This is peculiarly necessary. A sufficient amount of bland, unstimulating nourishment should be given. Local applications, such as poultices or flannels wrung out of hot water and turpentine, have often a beneficial effect. We are generally taught in our text-books that opium should be the main internal remedy given. Why this idea has become so thoroughly inculcated in the professional mind it is difficult to understand, unless it be on account of the advice long since given by the late Alonzo Clark, who recommended it in heroic doses in peritonitis and kindred diseases. His advice has been the cause of an incalculable amount of mischief. When you consider the physiological action both of the drug and the peritoneum, it will become apparent, and practical experience every day substantiates the conclusion, that, instead of being of benefit, opium is absolutely contra-indicated. What I have stated about the use, or rather abuse, of opium, finds its counterpart and applies with even greater force to the indiscriminate and empirical use of hot vaginal douches.

What will be found to be a beneficial remedial agent is small and frequently repeated doses of magnesium sulphate or Seidlitz powders, to secure a gentle daily motion of the bowels. When absorption has begun, small blisters of cantharides, about the size of a silver dollar, over the tumor, will be found excellent adjuncts. The patient should not be allowed to get up until long after all traces of enlargement and tenderness have disappeared.

Fortunate is the physician and thankful should be his patient when the trouble terminates in this happy manner. Occasionally, notwithstanding all care and skill in the treatment, absorption does not take place. It may take a variety of courses. It may remain for a long time stationary, ultimately breaking down and changing into an ichorous fluid and from that into offensive pus; or, it may form into numerous small abscess cavities in different compartments. These may remain an indefinite length of time encysted, but they ultimately burrow along through tortuous tracks and eventually rupture in some direction. The most frequent seat of this rupture is into the vagina, rectum, bladder above Poupart's ligament, or into the peritoneal cavity. All these are unfortunate terminations. The pus cavity will in all likelihood refill and keep discharging, rendering the patient a chronic invalid and making life a burden.

So soon as the medical attendant recognizes that the formation of matter has taken place, he should not delay in the hope that it will evacuate spontaneously, but should have it removed artificially and without delay. The principle I here advocate of opening these abscesses through the abdominal cavity, followed by subsequent drainage, is one that has given such excellent results as to justly entitle it to be considered the most satisfactory of all abdominal operations. When properly done it is almost entirely free from danger.

As suppuration is very frequently the result of the breaking down of a pelvic hæmatocele, and as the treatment is identically the same as when arising after inflammatory causes, it will be appropriate here to give a short paragraph to a consideration of the cause of this accident; and here we come upon a peculiarly interesting subject. It is now necessary to recognize the importance of the broad ligament in a physiological, but more particularly in a clinical, sense. Here lies the boundary line between a sudden, serious, and most alarming condition, and one of comparative safety. Both frequently result from the same course, yet the broad ligament draws a sharp line of distinction between their severity. It is not necessary for one to give a detailed anatomical description of these ligaments. It will suffice my purpose to say merely that they contain between their folds important vessels, and that any injury to these vessels will cause an effusion. From anatomical and physiological considerations, these effusions are either into the abdominal cavity or downward between these folds, giving us the two varieties of hæmatocele—intra-peritoneal and extra-peritoneal—the former fatal, if left to nature, ninety-nine times in a hundred, primarily from hæmorrhage or secondarily from suppuration and subsequent peritonitis. Everyone who has had much experience in abdominal surgery is familiar with the tendency there is for bleeding to continue when it occurs within the peritoneal cavity. Whether this is owing to the lymph which is always present there, rendering the blood too dilute for coagulation, or acting as an irritant and causing an increased secretion, it does not show much tendency to cease, save in a very imperfect manner. It rather keeps on until a dangerous, if not fatal, amount is poured out. This is quite otherwise with extra-peritoneal hæmatocele. There, as I have already stated, the effusion takes place between the folds of the broad ligament. There will be no lymph present there to render the blood too dilute for coagulation; on the contrary, it comes into contact with cellular and connective tissue, most powerful and natural hæmostatics. Again, the folds of the ligaments themselves form a limited cavity, so that it is almost impossible for a sufficient amount of hæmorrhage to take place to be dangerous to life. For these reasons this variety is not nearly so dangerous or fatal as when the effusion is into the peritoneal cavity.

It is due to the arrest of metrostaxis at the time

of normal menstruation, or to that pseudo-menstruation that occasionally follows operation on the ovaries or tubes. It is not dangerous, but delays convalescence for some time. It nearly always becomes absorbed, and seldom requires interference. A very frequent cause of this variety is the rupture of a tubal pregnancy downward. A hæmatocele of this kind comes on too suddenly to be inflammatory, and is indicated by a feeling of faintness, pain in the pelvis, small, rapid pulse, and sometimes the temperature rises. By examination there will be felt a soft, semi-fluctuating, doughy mass. The size will correspond to the amount of hæmorrhage. It is sometimes so extensive as to completely fill the cavity. When this is so, the rounded upper part can be felt above the brim of the pelvis. The upper limitations will correspond to the distended folds of the ligament. A remarkable and characteristic feature of this variety is an annular contraction of the rectum, caused by the blood pressing upon the lumen of the bowel, which renders defæcation difficult.

There can be but little doubt that many women have a metrostaxis following normal menstruation, and recover without ever consulting a physician. I am persuaded that a great number of these abscesses do not become absorbed, but go on to suppuration, and, eventually, if the surgeon does not come to the rescue, they burrow along in some direction, and finally rupture.

Heretofore, and, indeed, at the present time, the treatment usually adopted when the formation of pus takes place is by an opening made by a trocar or bistoury through the vagina, or waiting until the abscess finds an exit for itself. When they refill and discharge, efforts are made to facilitate drainage by dilating the sinus. I cannot regard but with apprehension the introduction of such instruments into these inflamed tissues. Such treatment is beset by innumerable difficulties and dangers. Experience daily illustrates the fact that there is considerable danger in passing a trocar, or other instrument, through the roof of the vagina. Beside the risk of doing irreparable injury to the bladder or a ureter, or to an artery, there is the uncertainty of finding the pus cavity. Should the surgeon be so fortunate as to come upon it, there is liable to be a *centre of débris* that cannot be removed in this manner. There is yet another probable chance that several pus cavities may be present, and then such treatment would not even be palliative, for obvious reasons. It is utterly absurd to endeavor to treat these cases, after their rupture, by dilating the sinus. I can understand that, when the abscess is well down and breaks directly into the vagina, such an opening may be all that is necessary; but these favorable cases are the exception. To follow the devious windings of sinuses high up is next to impossible. But the point I wish particularly to emphasize is, that we should not delay until this complication takes place, but as soon as pus is found accumulating we should have it removed without delay. Why the principles and laws that guide us in the accumulations of pus within the female pelvis should be different from those for the management of abscesses in other parts of the body, I cannot understand.

When properly done, the difficulties of the operation are comparatively few and the dangers are almost completely in the hands of the operator; so that to one accustomed to perform these operations the mortality is almost *nil.* When, however, the case has been neglected until the patient is reduced in health, and already has discharges of pus into the rectum, vagina, or bladder—and in those cases where all the pelvic viscera are bound down and matted together by dense adhesions—the difficulties become much more serious. Securing the walls of the abscess cavity to the abdominal walls, under these circumstances, becomes a troublesome task. This only illustrates the tenor of my argument, which is: Do not delay until this complication takes place. The general conclusion gathered from my own experience and from that of others is, that abdominal section for such abscesses is not a serious operation; that the recovery is much more rapid and certain; and that I cannot too strongly urge the advantages of this method of treatment.

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FIVE CASES OF SUPRAPUBIC CYSTOTOMY:

Three for Stone, One for Tumor in the Bladder, and One for Exploration with Catheterism of the Ureters; One Death.[1]

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Case I. *Stone in the bladder; suprapubic cystotomy; prostatectomy; recovery.*—I was called to Vineland, N. J., September 12, 1888, by Dr. C. R. Wiley, to see Mr. B., aged sixty-five. He had had the usual symptoms of stone in the bladder for six years. A Petersen's bag was inserted in the rectum and distended with ten ounces of warm water. The bladder was injected with six ounces of water with four grains of boric acid to the ounce. Suprapubic dulness then existed to two inches above the pubes. The operation was done by the usual vertical incision, and two stones were removed, weighing together 763 grains. The prostate projected so much into the bladder at the mouth of the urethra that I removed a piece a slarge as the last joint of the finger, by the scissors. The bleeding was slight. The bladder was not sutured. A drainage-tube was inserted and removed on the tenth day: a catheter was retained in the bladder for four days more.

[1] Read before the Philadelphia Academy of Surgery, April 6, 1890.

The patient recovered without any trouble, his highest temperature being 100.6°, falling to normal, both morning and evening, within a week. The wound healed entirely in four weeks.

In July, 1889, he had a return of his old symptoms, and Dr. Joseph W. Hearn, being in Vineland, was asked by Dr. Wiley to see him again. Dr. Hearn having detected a stone by the sound, reopened the former wound by dilating a small fistula which had appeared, then crushed and removed two stones, weighing 412 grains in all. After that time he was well until his death recently from another disease, as Dr. Wiley informs me.

I have no question that the stones removed by Dr. Hearn had formed since the first operation, for the entire interior of the bladder was inspected at that time and no further stone was detected.

CASE II. *Ankylosis of the knee; stone in the bladder; suprapubic cystotomy; recovery.*—R. J. B., of Bridgeton, N. J., first consulted me June 19, 1888. A tall, spare man, aged forty-three, with ankylosis of the left knee from a white swelling twelve years ago. Has also suffered considerably from rheumatic gout, and has a deformed right hand following it. There is also considerable ankylosis of both elbows. He passed a stone from the bladder for the first time in 1876, and since then has passed dozens of them, mostly phosphatic, and he has had also renal trouble from gravel, attended with hæmaturia, seven or eight years ago. He has passed no stone by the urethra for eighteen months, but his present attack of vesical irritation has existed for three years. He is obliged to empty the bladder from one to four times an hour. Urine, specific gravity 1011, small amount of pus and albumin, with phosphates; reaction faintly alkaline.

Operation, June 4, 1888. The patient desired that the "high operation" should be done in order that the condition of the bladder could be explored by the eye and the finger at the same time that the stone was removed. The ankylosis of the knee, as well as his wish, made me decide to do the suprapubic operation. The rectal bag was distended with ten ounces of warm water, and the bladder with seven ounces of water with four grains of boric acid to the ounce. The dulness of the distended bladder extended two inches above the pubes. An incision two and one-half inches long was made and the bladder easily reached, except for the difficulty with the anæsthetic, as mentioned later. An incision two inches long was made in the bladder and the stone was extracted. Its shape was that of a flattened sphere; it weighed 421 grains when dry, and its surface was quite smooth except at the edges.

The bladder wound was then closed with eight stitches of interrupted fine chromic catgut. The bladder was now injected with warm water combined with the boric acid in order to test the accuracy of the closure of the wound. No water escaped. The wound was then filled with water and the bladder was injected with nine ounces of air, when instantly a leak was discovered by the air bubbling up through the water. A stitch closed this, and made the bladder both air- and water-tight. Six stitches closed the wound in the abdominal wall, which included with care the aponeurosis of the abdominal muscles. The peritoneum was not recognized during the operation. A flexible catheter was inserted into the bladder, and its end was at first corked up and the bladder emptied every hour; but, as this caused some pain, the catheter was uncorked and continuous drainage into a urinal substituted.

6th (2d day). He has had no pain; his highest temperature is 100°; he is hungry, and has slept well. The wound was re-dressed yesterday, when everything looked well.

Four days after the operation there was considerable local tenderness and irritation, and on the sixth day this was so marked that I removed the stitches and evacuated some urine and pus, which had formed as a result of the giving way of the stitches in the bladder. The wound was drained for a few days and then closed, and he went home on the 25th, three weeks after the operation. Since that time he has had no trouble.

REMARKS.—No other operation than the suprapubic could have been done in this case on account of the ankylosis of the knee. The operation was an extremely difficult one, because unless he was deeply anæsthetized he was struggling, with the abdominal walls as tense as boards, and in order to relax them anæsthesia had to be carried to a point which I felt involved serious danger. Between Scylla and Charybdis it was very difficult to steer a safe course. The difficulty was especially great in suturing the bladder. In fact, I think it would have been wiser had I not attempted to do so, but had simply drained.

CASE III. *Stone in the bladder; surgical kidneys; death from sudden œdema of the lungs.*—W. H. C. was referred to me by Dr. Julius A. Johnson, of Easton, Md., December 11, 1889. His age is fifty-nine; his weight two years ago 185 pounds; at present about 135 pounds. Seven to eight years ago he first noticed that his water was passed very slowly. Four years ago had a brief attack of apparently acute inflammation of the bladder. Two years ago another attack of acute inflammation, with very thick urine, and required catheterization; has used a Nélaton catheter himself more or less ever since. Passes his water about ten times in the twenty-four hours; has never passed any blood, except as a result of the use of the catheter, he thinks. Has no pain in the small of the back, but suffers severely in the bladder and perineum, for which he has taken from one-half to one grain of morphia a day for about two years. In spite of his wasting, his appetite is good, and also his sleep, excepting that it is interrupted by the necessity of passing his water.

Eight years ago, while brushing his teeth, he touched a nerve, he thinks, and for a few minutes his face was "drawn." From one to two years later, while going home to dinner, his left arm and leg became weak, and he had no use of them for a

few minutes. He did not fall, but sat down, and after a short time walked home. A few times since then he has felt as if a similar weakness was coming on; seizing his wrist stopped it. In October, 1888, on a Saturday he had a fever and a chill from exposure to cold. On the following Tuesday his wife gave him a hot toddy. A little while afterward, while sitting in a chair, a "queer look" came over his face, so his wife states, and for a few minutes he "talked thick," but after that had no further trouble. He has never had any headache.

He has had at least three considerable hæmorrhages from the bladder. He is not quite sure, but thinks that the hæmorrhages came on only at the end of micturition, except the last time, when the urine was uniformly bloody from the beginning. The longest of these hæmorrhages continued for two to three days. By spells the urine has been alternately clear and bloody, and its passage attended with considerable soreness, which passed away as soon as the hæmorrhage occurred.

Once he passed a small calculus the size of a pea, and probably one hundred of about the size of a pin-head; these last at varying times.

Operation, December 26, 1889. I was assisted by Professor Brinton and Drs. Horwitz and Coplin. Owing to the bad condition of his kidneys, chloroform was given instead of ether. The field of operation was thoroughly prepared the day before. Petersen's bag was inserted into the rectum and distended with twelve ounces of warm water. I had not examined his bladder instrumentally before, as it gave him great pain even to introduce a soft instrument, and in view of his general poor health and the damaged condition of his kidneys, I determined not to give an anæsthetic twice. In order to fill the bladder as well as to explore it, I now introduced a silver catheter. The instant it entered I struck an evidently large stone. After washing out the bladder, nine ounces of warm, boiled water were introduced through the catheter; as soon as this limit was reached the water began to escape alongside of the catheter, and to prevent its further escape, rubber tubing was tied around the penis. Notwithstanding this double dilatation, the belly was still resonant down to the pubes, though the resonance slightly diminished as the pubes were approached. An incision was made in the middle line from the pubes three inches upward. As soon as the belly-wall was cut through, the peritoneum was encountered, reaching all the way to the pubes. It was readily lifted to the upper end of the incision, but as it was more than usually thin, and required an additional assistant, I determined at once to get rid of this necessity and danger, by placing the patient in Trendelenberg's position. A tall, stout nurse, with his back to the patient's perineum, took the patient's knees over his shoulders and thus lifted the pelvis about a foot from the table. The peritoneum at once disappeared at the upper extremity of the incision. The bladder was still so deep that a possibility, even, of its rupture from the injection suggested itself to me. It was found, chiefly by the aid of the catheter which had been placed in it, at a depth of three inches from the skin. Several large veins were first ligated, both on the bladder-wall and in the connective tissue in front of it. The bladder was then opened, and one large and three small stones removed. The small stones were about the size of Lima beans; the large one crumbled down, under the grasp of the forceps, into a number of fragments; the stones were phosphatic. The weight of all that was recovered was just 600 grains, and I estimated that fifty or sixty grains were lost in the débris in washing out the bladder. The wall of the bladder was much pocketed, and the three small stones were found in these pockets, and would almost inevitably have been overlooked had any other operation than the suprapubic been done. They were readily extracted by the finger in searching for fragments. The prostate, which had been found but little enlarged toward the rectum, was greatly enlarged on the vesical aspect, the enlargement being chiefly in the middle line and to the right, forming a uniform, rounded mass, bulging into the bladder just behind the orifice of the urethra, but not blocking it. Prostatectomy, therefore, was not done.

The walls of the bladder were rugose and about three times their natural thickness. The wound in the bladder was not closed. A drainage-tube of soft rubber with a bulbous end was introduced into the bladder. As there was so large a space between the bladder and the abdominal wall, I thought it prudent also to introduce a second drainage-tube for the first forty-eight hours into the pre-vesical space. The abdominal wall was then closed by interrupted sutures, the two drainage-tubes coming out together at one interspace.

31st. Reacted very well from the operation. For two days he had slight vomiting, and on the third and fourth days considerable hiccough, which yielded to one-quarter grain doses of cocaine. His temperature fluctuated between 97.9° and 99.6°, only once reaching 100°. The wound was irrigated through the drainage-tube with warm boric acid solution. The pre-vesical drainage-tube was removed at the end of forty-eight hours.

When I left him at 5 P. M. on the 30th (the fourth day) I felt very well satisfied with his condition and quite assured of his recovery. So far as could be judged, the amount of urine secreted was ample, and there was no danger apparently from the kidneys. At 9.30 P. M. on the night of the 30th acute œdema of the lungs set in, followed by death in seven hours. No post-mortem could be obtained.

REMARKS.—This operation was only undertaken in view of the urgent symptoms. The bad condition of the kidneys and his serious antecedent history of cerebral disturbance of course contra-indicated operation, but his suffering from the stones in the bladder was so intense that relief was absolutely necessary. That life was terminated by the sudden œdema is not to be wondered at in view of the renal complications.

No case ever showed me better the value of Trendelenberg's position. The moment he was placed

in that position, not only did the peritoneum fall down and away, but the bladder was made accessible, although being so deeply placed. Neither the rectal bag nor filling the bladder with water raised it to the abdominal wall, and I was seriously afraid that the bladder had been ruptured, although no more water was injected than the capacity of the bladder easily permitted.

CASE IV. *Papilloma of the bladder; removal by suprapubic cystotomy; recovery.*—Mr. S., aged fifty-seven. (The following history was furnished by Dr. Lorini, his medical attendant.) Family history negative; no cancer. He had malaria in the sixties with biliary fever. He had marked trouble with his gall-bladder from 1878 to 1881, and visited Carlsbad, since which time he has had no return of the trouble. There is no history of urinary calculus or gravel. In 1885 he had an attack of cystitis with blood in the urine for a few days. He was circumcised in 1887. For thirty years he has had a sense of discomfort in the small of the back. About August 1, 1889, after a horseback ride at Ocean Beach, N. J., bleeding from the bladder began, but yielded to internal remedies after two days. August 15th, another attack came on and continued for a few days, but yielded again to the same remedies. In January, 1890, a third attack lasted for nine weeks, in spite of internal remedies and the actual cautery over the back. In April and May his bladder was washed out with boric acid and nitrate of silver solutions of various strengths. After five days the bleeding stopped, but returned again about the middle of June, and continued up to the middle of August, in spite of the use of the nitrate of silver and boric acid solution. He spent the summer in Maine and gained greatly in health. The capacity of the bladder was undiminished, and the urine contained neither casts nor albumin when there was no blood. There was slight prostatic tenderness. The blood was always thoroughly mixed with the urine from the very start, whether drawn by catheter or voided voluntarily. Clots were passed from time to time. These were of irregular shape and seemed to be fewer and smaller when he led an active life, more numerous and larger when he rested. No shreds of tissue have ever been found, in spite of the most careful watching, except one minute specimen, which was thought to be papillomatous, and the deeper cells possibly sarcomatous, by Dr. F. A. Packard.

November 13, 1890, the hæmorrhage returned more profusely than ever, and has continued to the present time, in spite of internal remedies, washing out the bladder, hypodermics of ergotine, etc.

Status præsens, Dec. 7, 1890. When I saw him for the first time, at this date, I found a short, stout man who appeared to be in good health, but with an anæmic, pale skin, and who was evidently suffering from the mental depression incident to the continued hæmorrhage. He had lost but little flesh, and his anæmic appearance, as was stated to me by Dr. Lorini, who had known him for many years, and under whose care he now was, was habitual and not a result of the bleeding, a rather surprising fact in view of the amount of blood lost. I saw him void his urine, which was porter-colored from the first drop. There were some small clots of irregular shape, and from the amount of urine passed and its color and clots I estimated that the amount of blood lost was not far from half a pint a day. Dr. Crozer Griffith examined a specimen of the urine for me. It showed no casts; a large amount of blood was present, with an excess of white blood-cells, which in some places were adherent to each other in masses, as in cystitis and other suppurative processes. No epithelial cells were found. Fragments of possible tissue were examined and found to be only clots which had rested somewhere in the urinary tract sufficiently long to become largely fibrinous. The urine contained 2 per cent. of urea. The blood count showed 3,890,000 blood cells, 53 per cent. of hæmoglobin, and no plasmodia. A careful examination of the region both of the bladder and the kidneys, not only by myself but by Drs. Lorini, W. J. Taylor, J. William White, and William Pepper, was entirely negative. There was no dulness, no tenderness, no pain, but simply hæmaturia and nothing more. On December 13, 1890, I attempted to examine the bladder by the cystoscope, but was unsuccessful in detecting anything. The bloody urine was first drawn and replaced with a warm boric acid solution, but in spite of the most careful use nothing further could be seen.

The day after the use of the cystoscope he observed in urinating that some air or gas bubbled out. I attributed this naturally to some air which had been injected into the bladder with the fluid, but he called my attention to this difference: that at the present time the gas produced no pain, but that when air was injected it produced distinct pain as it often had done a year ago when washing out his bladder. This discharge of air or gas has continued up to the present time. It does not occur with each act of urination, but occurs at least once a day, and takes place at the end of urination, not at any other time. It is especially noticed when he strains to press out the last few drops from the bladder. So far as he can observe the gas has no odor, and I have observed that the urine has none, nor have the clots that have been passed. He has had no pain in his bladder or rectum.

His wife tells me that she thinks there is a distinct loss of strength in the last few weeks, and also that for the last year or more he has been more drowsy than formerly.

Operation, December 29, 1890. Assisted by Drs. J. William White, William J. Taylor, Orville Horwitz, J. C. Da Costa and Dr. Lorini, his physician. The bladder was first washed out and then filled with 9 ounces of a boric solution, a drachm to the pint. The Petersen bag in the rectum was then dilated with warm water, but as soon as the capacity of eight ounces was reached the resistance became so great that I desisted from introducing any more. An incision in the median line disclosed the bladder, which was secured by two ligatures and then incised. As soon as the finger was introduced I perceived a

small tumor near the right ureter. With the electric light it was inspected, though with some little difficulty. In doing so I used both Watson's vesical speculum and my own, but each had to be supplemented by a long pair of forceps to push back the posterior wall of the bladder. The tumor was about the size of the end of the forefinger, say a little over half an inch in diameter, and about the same in elevation. It was strawberry-like in its appearance, though not quite so red. Near to it were two other small elevations of the size of a moderate pin-head, which were thought possibly to be the beginning of similar growths. There were several other very minute growths, but so small as to make it doubtful whether they were normal or pathological.

The tumor and the two small elevations near it were seized by the forceps and drawn forward somewhat forcibly, and the mucous membrane for some little distance around the base was removed with the tumor by curved scissors. The bleeding was very moderate and required no special means for its control.

One stitch was put in the wound in the bladder and four stitches in the abdominal wall. Two drainage-tubes were introduced, one into the pre-vesical space and the other into the bladder, both secured in place by stitches in the skin. A large wood-wool dressing was then applied over the wound, and aristol ointment spread over the abdomen under the dressing. The dressing was to be changed whenever it was wet, and the bladder to be washed out with a warm boric acid solution.

He was put to bed in a very fair condition. During the operation Trendelenberg's position was also tried, but its advantages were not very manifest. Still there was, I think, slightly greater ease of access to the bladder. The ureters were seen and an attempt was made to catheterize one of them, but without obtaining any urine. In justice to the procedure, however, it should be said that we did not persist long enough, probably, to make the attempt valuable. We had found sufficient to account for his condition, and we did not deem it just to him needlessly to prolong the operation.

No communication was discovered between the bladder and the bowel, though the interior was carefully examined at every point.

January 1, 1891 (the third day). Since the operation, now three days, he has gone on steadily improving. His highest temperature was on the night following the operation, since which time it has been 99° and a fraction. The wound looks perfectly well. On the second day he developed spasmodic pain, which he referred to the prostate, the attacks of which were quite severe. Thinking that it might be due to the pressure of the end of the drainage-tube in the bladder, I removed this rubber tube and replaced it with a shorter tube of glass, but during yesterday, his pains being so severe, Dr. White, as I was absent from the city, removed the tube from the pre-vesical space. This was not followed by immediate relief, but with some amelioration of the attacks, and finally their disappearance at the end of about twenty-four hours. The tube in the bladder I removed to-day. His appetite is very good, so that he enjoyed a small chop yesterday and a small beefsteak to-day. His sleep has been very fair.

3d (fifth day). He has had a good deal of vesical tenesmus, for which I cannot see any reason. The wound looks well. Two of the four stitches were removed to-day; some small shreds of sloughing connective tissue came away. In examining the rectum a few days ago Dr. White thought he detected a nipple-like prominence, just as would exist if there were a fistulous opening in the rectum, and at the operation a pouch in the posterior wall of the bladder was discovered, which possibly corresponds to this, although no opening or other lesion could be detected either at the operation or since. A large enema yesterday emptied the bowels thoroughly, and there has not been, either from the bladder or from the bowels, any evidence of communication between the two.

From this time on he improved very rapidly. His pain quickly lessened and the wound closed at the end of five weeks. Since that time he has been perfectly well. There has been no escape of fæces or of gas from the urethra, nor has there been the least return of the bleeding.

The tumor was examined by Dr. J. P. Crozer Griffith and Dr. Burr, and was found, on section, to be a compact sessile form of papilloma without any filiform fringes.

CASE V. *Possible tumor of bladder; boutonnière operation; later exploratory suprapubic cystotomy, with catheterism of the ureters by the aid of the electric light; recovery.*—M. H., of Mauricetown, N. J., aged twenty-eight; weight 121 pounds. Was referred to me by Dr. Samuel Butcher, November 22, 1889. Family history negative. No venereal history. On June 5, 1887, when he rose from bed he passed clear blood from the bladder without pain and without apparent reason, he being then apparently in perfect health. The blood was intimately mixed with the urine from the very first drop. With slight intervals the urine has been bloody ever since. A week after the hæmaturia he became a little better, when a sudden retention for twenty-four hours was followed by the evacuation of a quantity of clots. There are usually no clots, but the blood and urine were intimately mixed. For the first year he suffered a little pain; since then he has only had slight pain in the loins, possibly more marked on the left side. In June, 1888, he had bilious fever, and in December, 1888, and January, 1889, clots accumulated again and required a catheter. He thinks that occasionally the clots were long and slender, especially when few in number, being one to two inches long and about the thickness of a pin.

When clots accumulate in the bladder he has considerable pain near the anterior superior spine; his water then clears up and is apt to be more colored when the pain disappears. No calculus is discovered by sounding, and there is no pus in the urine. He passes about the usual quantity and urinates five or six times a day. Nothing is found in the urine by microscopic examination but blood. A small amount of albumin is present when there is blood

in the urine, but when there is no blood the urine is absolutely free from albumin.

Dr. Hearn examined the patient some months ago, and believed that there was a papilloma in the bladder. I admitted him to the Jefferson Hospital in December, 1889, and watched the urine with great care. No long, slender clots were at that time found, but only irregular-shaped clots. Small fragments of a possible papilloma were watched for carefully, but only one or two were found at intervals, which were believed by Drs. Longstreth and Coplin to be fragments of a doubtful papilloma. The renal symptoms were practically *nil*, for the pain in the loin was but slight, and scarcely more marked on one side than on the other. No increase in the dulness over either kidney was noted, nor was there any tenderness on palpation by one hand nor on bimanual examination. The tenderness near the anterior superior spine only existed when there were clots in the bladder, and there is no tenderness at present.

First operation, January 3, 1890. I explored the bladder by the boutonnière opening. As soon as the finger entered the bladder, I found at the upper right wall posteriorly a soft, velvety mass. Whether it was a tumor or the bladder-wall I was not able definitely to decide. I introduced a pair of smooth-bladed stone-forceps until the bladder-wall was touched, then withdrawing them half an inch and closing the jaws I found that I had grasped something, which by traction gradually yielded with a sensation as if thread after thread was being torn. In the jaws of the forceps was a florid mass, looking not unlike a blood-clot, but traversed by threads which looked like fibrous tissue. Nothing like mucous membrane was seen. A number of small masses were removed in this way, amounting in all to a mass about twice as large as an English walnut. Twice I tried Sir Henry Thompson's serrated tumor forceps, but both times, in spite of using every precaution, I found that I had caught the bladder-wall, as was manifested by its not yielding after the same gentle traction as before, and by the mucous membrane being drawn into the wound. The bleeding was inconsiderable. Watson's perineal drainage tube was inserted.

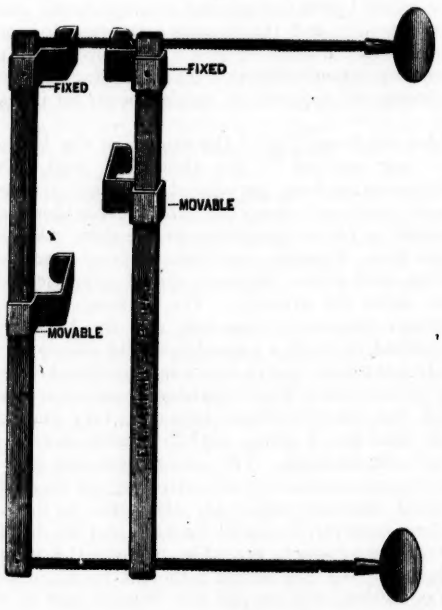
He recovered from the operation without difficulty, the wound closing in twenty days, at which time he went home. The urine at first cleared up considerably, though afterward it again became bloody, but two months later it was almost clear. The mass removed was again submitted to Drs. Longstreth and Coplin, but in spite of careful examination they were still doubtful whether the masses were blood-clots or fragments of a papillomatous growth, although rather inclined to the latter opinion.

May 23d. He has gained fifteen pounds in weight, feels much better, and has had no pain since the operation. The urine has generally been clear until the last two or three weeks, when the blood has reappeared, with small clots. I have repeatedly seen him pass his water, both before the operation and since, and it is uniformly bloody from the start.

November 15th. I examined the bladder by the cystoscope, but could only see a uniformly red and apparently healthy bladder-wall.

Second operation November 18th, at the Jefferson Medical College Hospital. Nine ounces of warm boric-acid solution (four grains to the ounce) were injected into the bladder, and eleven ounces of warm water into the rectal bag. The injection into the bladder alone produced dulness of but one finger's-breadth above the pubes. This was increased, by filling the rectal bag, to 2.5 inches. A three-inch incision in the middle line disclosed the bladder very readily. The peritoneum was not seen. The bladder was opened, and the edges of the opening caught with two hæmostatic forceps. A special retractor, which I had devised (Fig. 1), was

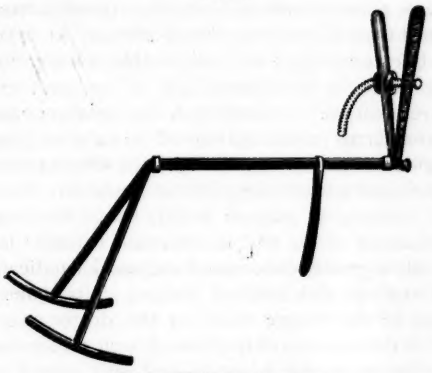
FIG. 1.



then inserted, in order both to separate the recti muscles and the edges of the opening in the bladder, and a small, hooded, two-candle power electric light was used to examine the bladder. A prior examination by the finger the moment that the bladder was opened gave an entirely negative result. The examination by the electric light was extremely satisfactory; on the right upper and posterior wall of the bladder was seen a scar about one and one-half inches in diameter, evidently the result of the first operation. It was smooth and healthy. I found a good deal of difficulty in examining the posterior wall, inasmuch as the bladder contracted as soon as the water escaped, and was thrown into deep folds. By inserting the angular large hæmostatic forceps, or pedicle forceps, and opening the blades, I was able to push the bladder upward and unfold the creases in its wall. To obviate this difficulty I have lately devised another instrument (Fig. 2) which as yet I have not had an opportunity to test. I then

discovered between and above the orifices of the ureters a small ulcer, a scant quarter of an inch in diameter, possibly tubercular. A piece of the bottom of it was pinched off for examination microscopically, but showed no bacilli.

Fig. 2.



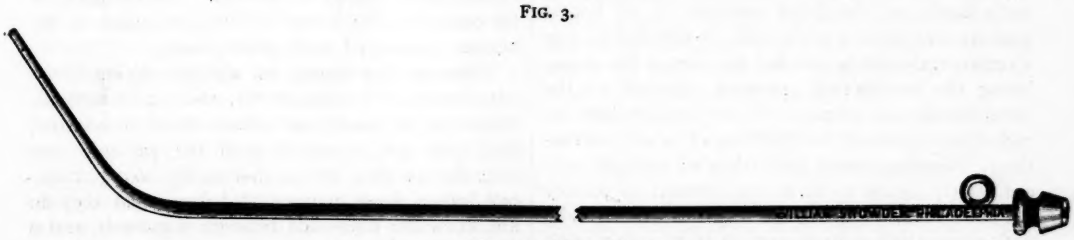
Bladder-dilating instrument.

I found that I could examine the posterior wall of the bladder a great deal better when the rectal bag was removed. The orifices of the two ureters were seen, and both successfully catheterized. From the left ureter bloody urine was obtained, and from the right one clear urine.

When the urine escaped into the bladder no difference in the urine from the two ureters was perceptible, as the red wall of the bladder made both look alike. But when they were collected in a small glass cup the difference in their appearance was instantly perceptible.

To facilitate this ureteral catheterism I have devised an angular catheter which I believe will be of service (Fig. 3).

Fig. 3.



Instrument for catheterizing the ureters.

The opening in the bladder was then stitched, except at its lower end, where a drainage-tube was inserted. The external wound was partly closed.

December 8 (three weeks). The patient went home to-day. The drainage-tube was removed on the second day after the operation. The rest of the wound healed very well, but the opening in the bladder did not close until two weeks after the operation. Until that time the urine had been much freer from blood, but it now became much more bloody. No especial incident attended his recovery. He still has bloody urine. Whenever he is ready I intend to explore the left kidney.

Remarks.—In the case of M. H. (Case V.) I have been a good deal puzzled as to what it was that I removed at the first operation. Certain it was that the mass was adherent to the bladder wall, and certain it was, also, that it was not the mucous membrane. The differentiation by means of the two kinds of forceps was perfectly clear. In some way the blood-clot apparently became attached to the wall of the bladder and sufficiently attached for its removal to leave a visible scar.

The catheterization of the ureters in this case by the aid of the electric light was perfect. I beg to call especial attention to the fact that the difference in the color of the urine from the two kidneys could not be noticed so long as the urine escaped into the bladder, for the uniform redness of the mucous membrane prevented the true color from being detected. Only when the water was drawn in a glass was the difference between the two distinctly perceptible. Whether the hæmaturia which is now determined to be from the left kidney is a case of hæmophilia, pure and simple, for which Brown[1] has recently done a successful nephrectomy, or whether there is any true disease of the left kidney I do not know. It was only after the catheterization of the ureters that the significance of the slender, cylindrical clots was really known. It is true that the question of ureteral clots had been considered, but yet when I saw him nothing had been seen that resembled them, nor was it at all certain that they were anything more than accidental. They were certainly not common.

As a result of my present experience with the boutonnière and the suprapubic operations, I would certainly prefer the latter as by far the better. In view of the persistent hæmaturia, with its baneful effects both on mind and body, I propose to explore the left kidney whenever the patient is ready, and if the indications point that way, to do a nephrectomy.

[1] American Journal of the Medical Sciences, November, 1890, p. 522.

Case IV. resembles this one in many ways. In both the hæmaturia was the only symptom present, and the diagnosis was correspondingly obscure. Although Mr. S. had the advantage of the most skilful diagnostic opinions, yet it was with great doubt as to whether the papilloma really existed in the bladder or not, that the operation was begun. It was clear, however, that something ought to be done, for the disease was making inroads on the patient's nervous system quite as much as on his physical condition. The kidney was so absolutely exempt from any indication of disease, that it did not seem right to explore there; and even if I had decided to do so, the question *which* one, was still a difficult one to solve. I would call especial attention to the fact that in both these cases the urine *was uniformly bloody from the beginning of micturition.* In the case of M. H. (Case V.) it ought to have been so, for it came from the kidney, but in the case of Mr. S. (Case IV.) it ought not to have been so, for as a rule a tumor in the bladder bleeds only toward the end of micturition when it is squeezed by the contracting bladder. The element of uncertainty thus introduced was very puzzling.

SURGERY OR ELECTRICITY IN GYNECOLOGY.

BY HORATIO R. BIGELOW, M.D.,
OF PHILADELPHIA.

"THE difficulty of separating a man from his opinions tends often to give scientific controversies the appearance of a personal attack, when nothing should be further than that from the minds of those engaged upon the questions at issue. Jealousy for truth should so absorb the attention of all honest workers that friction of thought, as afforded by free discussion, should be courted as a means for stimulating the intellectual processes essential to the development of science. If the maintenance of individual opinion is the chief object in such discussions, they degenerate into trials of strength, and are utterly useless so far as the interests of science are concerned. Indeed, one might as well contend with a stone wall as to attempt to argue with a mind that is not open to conviction."[1] This is very happily phrased, and altogether truthful. Who shall define the "stone wall?" If my "doxy" be not to the liking of my professional brother over the way, he immediately infers that I am not open to conviction, because I cannot accept his demonstrations as proven facts. And, as opposed to this, I may be quite as prone to think him stubborn, or a victim of one "idea," because he fails to keep in elbow-touch with me. Here lies the necessity of that power granting the "giftie" to see ourselves as others see us. Here the necessity, also, of close introspection to see if the fault be really not a personal one, in which our scientific blindness is the result of prejudice. To arrive at the point of conviction, the more especially if such conviction shall carry with it the necessity of a total surrender of previous views, practices and opinions, the argument must be based upon a solid foundation of fact—as opposed to inference—upon the best possible investigation of the claim, in the clearest light of the most recent developments. I should not, for instance, care to surrender my present opinion of the value of gynecological electro-therapeutics upon the simple record of the doctor's experience; neither would she, if I read her tenacity of purpose aright, forego the surgical euthanasia of the scalpel, because I consider laparotomy a greatly condemned and sadly handicapped alternative, with much of humbug in its claims. I may be the "stone wall," or the doctor may be. With the opinions of intellectual men pretty evenly divided upon the question, and with goodly hosts behind each of us, clearly the much-berated middleman must be called in to decide between us. This middle-man is the consentient verdict of the profession which will be delivered after all the evidence is in. I have said that the doctor's argument would not carry much weight with me, since I should be inclined to question the method used, no matter by whom employed. I am more than ever impressed with the danger that may befall a useful discovery by enthusiasm and faulty tools, since I have examined the electrodes used by some practitioners in the United States, and since witnessing their limited knowledge of electrical currents. For the good of the cause, for the honor of the good name of my master, Apostoli, I must speak plainly.

There are few among us, whether calling themselves pupils of Apostoli or not, who use his method. When people assert, as I have heard it asserted, that they get no result from the galvanic current, though they try it thoroughly, using a *one-cell battery*, I am inclined to believe that they do not know the difference between a galvanic and a faradic current. But this is really not a particle more lamentable than the efforts of a physician to arrest the hæmorrhage of a uterine myoma by using within the cavity a *small platinum electrode*—and yet these small electrodes are used almost exclusively by those employing electricity in this country. *The only kind of an electrode that will surely arrest bleeding in the vast majority of cases is one that will completely fill the whole cavity of the uterus, so that not one bleeding-point shall escape.* After the most thorough application with the platinum electrode the bleeding often continues. Why? Simply, because only one part of the endometrium has been reached, and the other bleeding-points are un-

[1] Dr. Anna M. Fullerton: Annals of Gynecology, January, 1891.

touched. Hence Apostoli's device of olive-pointed carbon electrodes of different sizes. The doctor has had some inflammatory reaction after some applications. In a very large experience with the method of Apostoli I have never seen one such, save in a few cases of puncture of big pus tubes, when there should be rightly and necessarily more or less reaction. Did the doctor ever see a laparotomy without some kind of reaction? Why have I seen no such reaction? Because the applications were all made by a man who knew what he was about—by Apostoli himself. The doctor feels "in floundering about after such blind guides, as if the earth beneath our feet was 'without form and void;' and as if the dictum of the Creator, 'Let there be light!' would alone dispel the mists which still shroud in darkness the properties and activities of this wondrously 'subtle' and 'potent' agent." I am sorry that the good doctor should flounder about so hopelessly, but flounder she must, unless she, of herself, will study up the subject, and then, with proper knowledge and proper tools, apply the subtle agent as the necessities of the case may demand. If she wants to be well served she must serve herself, and if she wants to be really honest and just, she must be sufficiently *au courant* with the subject to know that the method is being used as it was intended to be used. To one who will read his writings without surgical spectacles, and who will not offer to public criticism little bits of excerpts here and there, there is nothing obscure in what Apostoli has written. The obscurity is within the brains of those who do not want to understand—another "stone wall," as it were. I would say: *Go as high as the patient can stand it*, and as *the clinical indications need.* This seems to me, and will seem to anyone else who has had sufficient experience in electro-therapeutics, even when conjoined to the other citations made by the doctor from the writings of Apostoli, to be plain enough. Why flounder in this? Is not individual idiosyncrasy a fact recognized by physicians? And this is the summing-up in a word of what Apostoli says. Find out the idiosyncrasy, and regulate the dose accordingly. This is what he says. Good, plain sense, and easy of comprehension.

I use intra-uterine applications and punctures continuously in the dispensary work in which I have the honor to be associated with Dr. Massey. There is no objection to it, *if the method be carried out in all of its details.* I would ask the doctor if she has not found it rare among her pupils, and indeed among practitioners as well, to find one who could introduce the sound easily up to the fundus, or to find *any one* who could introduce it in a canal made extremely tortuous by a fibroid growth. I have seen the effort made over and over again at Apostoli's clinic, by men well educated in the gynecological world, without success. I know of one, as highly placed as any name on record, who totally failed to introduce the sound in a case where the cervix was pressed against the symphysis pubis and the canal extremely tortuous. Yet, with marvellous deftness, Apostoli introduced it in a twinkling. Now, until this dexterity has been acquired, it would be folly to practice electro-therapeutics, because with each application half of the endometrium would escape. I would also like a more definite statement from the doctor as to the current strength used, and the particular current employed, whether + or —. I believe the doctor to be thoroughly honest in the expression of her views. I believe her to be sincere in her search for truth, and I believe, without questioning, that she did her very best to demonstrate the value of electricity; but since her experience is so entirely opposed to my own, I must believe that there was something wrong, either in the application or in the diagnosis. Electricity will not answer in all cases. It will do harm under certain conditions. It is the duty of the thoroughgoing electrician to differentiate between these. A harum-scarum service, with unbounded faith in electricity as a panacea, is the devil's work, and will go to the wall when attacked by professional morality. It is not a panacea. No good man and true has ever said it is. The services of the surgeon will always be needed. We all admit it. We hope, however, to reduce the number of cases that seek surgical interference, and this, too, with a painful appreciation of the consequent tumble of incomes that may result. Let me commend to all readers of The Medical News the article presented by Dr. Apostoli, at the Tenth International Medical Congress at Berlin last year, which has been translated for the *Annals of Gynecology* by Dr. Lapthorn Smith.

Bingham House.

ON CERTAIN FORMS OF TREMOR.

By HENRY S. UPSON, M.D.,

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It is a striking fact that, although much light has in late years been thrown upon the pathology of paralysis and anæsthesia, the organic changes which cause tremor are almost as little known as ever, being confined to the two suppositions, that tremor is often caused by lesions in and about the optic thalamus, and that it may sometimes be of cortical origin. Of the possibilities of tremor from spinal cord and peripheral lesions we know little or nothing. The first working hypothesis of any value in this field comes to us from Mercier, a disciple of Hughlings Jackson, in a work entitled *The Nervous System*

and the Mind. Mercier's statement is based on a consideration of the processes of generating, storing, and liberating of force in nature, and although not supported by inductive evidence in sufficient quantity to amount to a demonstration, as a theory deduced from general laws it is of great value, especially as it brings what little is known of the conservation and liberation of energy in nerve tissues, into harmony with similar facts in the rest of the organic and inorganic world.

Stated briefly, his argument is as follows:

The storage of force in nerve-cells is effected by nutritive processes; that is, by the appropriation and segregation of materials which, by a rearrangement of their molecules into more stable compounds, liberate energy. The building-up of these complex molecules is going on all the time, while their falling into simpler shapes, with the consequent liberation of energy, is only occasional; so that we have to study here the mode of action of a force constantly accumulating and occasionally discharged. The first question which presents itself is, What causes the discharge; or, rather, when once begun, what causes it to cease? We know that force, like matter, is persistent; that is, it continues in the same way and with the same intensity until altered by some other force; so that the discharge of a nerve-cell, once begun, unless influenced from without, can never stop until the energy of the cell has entirely exhausted itself. As a matter of fact, healthy cells do always stop short of complete exhaustion, and, as a rule, stop at once after the ceasing of the determining cause of their action; and as the doctrine of persistence of force, completely proven to hold throughout both the organic and inorganic worlds, absolutely requires an active force as the cause of this cessation, one has been postulated and called inhibition; and it is Mercier's idea that this is a force constantly exerted by each nerve-centre on the centre just before it in importance, so that the centres are arranged in a hierarchy, each subject to the one just above it.

A moment's consideration will show that the resultant of two opposing forces is not, as might at first glance appear, a single force acting regularly, but is almost invariably a rhythmical motion. Examples of this fact are the motions of the planets in their orbits, as a result of the opposing forces of gravitation and tangential momentum; the swaying of a reed in the wind, as a result of the opposing of the elasticity of the reed to the impact of the air; the rattling up and down of the lid of a tea-kettle, as the result of the opposing actions of the steam within and the weight of the lid. Such examples might be multiplied indefinitely, so as to prove, as Herbert Spencer has shown, that all motion and all progress, moral, mental, and physical, is not uniform but rhythmical, consisting of oscillations on either side of a mean point, which may itself be stationary, but is usually slowly advancing or receding.

In nerve tissues we have to do with two opposing forces, one of which, inhibition, may, for any given time, be regarded as constant; the other, the force within the cell, is ever on the increase, so that the condition of equilibrium within the cell must become more and more unstable until the inhibiting force is overcome, and a discharge is the result. As above pointed out, the discharge is rhythmical, and consists of a succession of puffs or outbursts, which, in the case of a motor ganglion cell, gives rise to successive contractions of the corresponding muscle. Under normal conditions one contraction follows so closely on the other that they are merged, and the muscle does not relax until the discharge ceases. This is the case in health. What will happen if, for any reason, storage occurs much more slowly, or inhibition is much stronger? We see at once, from analogies in nature, that the separate discharges will be more powerful and will take place at longer intervals. If, for instance, the fire under the kettle be gradually diminished, the lid, instead of rattling up and down, will give an occasional vigorous jump; a stiffer reed in a stream of water will vibrate more slowly, but with a wider excursion, than will a slender one.

The epileptic convulsion is the result of a discharge so widespread and intense, that it furnishes possibly the best instance in which to study the opposing forces which are readjusted in every muscular act. The liberation at the beginning of the convulsion is enormous, and as the inhibitory force is at this time little or nothing, the result is a series of discharges which follow each other so rapidly as to be practically merged, and the result is a tetanic contraction of all the muscles. As inhibition increases, the discharges follow each other more and more slowly, until they are no longer completely merged, and a slight tremor begins to be manifest. This tremor becomes coarser as inhibition begins to preponderate, until, finally, after a few tremendous contractions of all of the muscles together, inhibition predominates and the attack ceases. This explanation of the epileptic convulsion is, of course, largely hypothetical, but it illustrates beautifully Mercier's theory, and brings the phenomena of convulsion into harmony with that which has, by physiological methods, been proven in regard to the contraction of a muscle in health. This view of inhibition also explains very well the tremor of fatigue, alcoholism, poisoning by tea and tobacco, in fact, of all conditions in which storage of force is diminished. It is especially applicable to Charcot's view of the characteristic tremor of multiple

sclerosis. It may well be supposed that nerve-fibres deprived of their myeline sheaths and running through sclerosed tissue would have less conductivity than would normal ones; that is, their resistance would be increased, and this would constitute a practically increased inhibition to the wave of nerve force; so that the latter, instead of coming out at rapid intervals, would come in strong and widely separated shocks. There is another view of the causation of tremor in this disease, which ascribes it to the location of sclerosed areas in the brain, and mainly in or about the optic thalami. German observers have pointed out the fact that in cases of multiple sclerosis with the typical tremor, patches of sclerosis are invariably found in this locality, and in no case of purely spinal sclerosis has the typical tremor been present. The case which follows is an example of this, and is one of several which have recently come under the writer's observation:

O. L., forty-seven years of age, married, worker in sewer pipe. The patient was entirely well until he went into the army in 1861. He served about a year, and left on account of lung trouble. He had great pain in the left side of his chest, cough and expectoration. He spat blood twice about nine years ago. This trouble lasted for years. He still coughs a little, but has been much better for the last four years. He has been subject to headaches ever since he left the army; these are in the frontal and occipital regions, and last two or three days. There are usually no eye symptoms, but sometimes in the last few years he thinks he sees spiders and other objects. The headaches are accompanied with much dizziness and vomiting.

The patient had typho-malarial fever eleven years ago, and after that his left arm became very weak, and he thinks he lost feeling in it. The left leg then became weaker. There were some gnawing pains and prickling sensations; no shooting pains. He has had three attacks, the last one six years ago, in which he lost consciousness for a few minutes; became purple in the face; there were no clonic movements, but the hands were tightly clenched. There was no headache afterward, but great weakness for two or three days, and the patient was quite forgetful, so that he entirely lost the three or four days following the attack. The patient was in bed two or three weeks five years ago, with severe pain through the temporal region and in the left chest. The left leg and arm have grown weaker, so that the patient has been unable to be out of bed for the last three years. He has severe pain in the head a large part of the time, worse at times, unrelieved except by morphine. At times the pain has started in the right temporal region and shot into the right eye. The pain feels as if it were deep in the head. The memory is clear, and intellectual faculties as good as ever.

The right eye has lately been removed by Dr. B. L. Millikin, on account of an injury sustained by the patient when a young man.

On examination, the left pupil reacts to light and with accommodation; no paralysis of the external eye-muscles; no deviation of tongue or face. There is marked loss of power in the left arm and leg; fair power in the right arm and leg. Anæsthesia to tactile, painful, and temperature impressions is very marked on the left side, but nowhere absolute. There is no anæsthesia of the face. The knee, triceps, and wrist reflexes are well marked on the right side, and much exaggerated on the left; ankle clonus is marked on the left side, slight on the right. The muscles on the left side are moderately wasted, and this side feels cooler than the other. There is no reaction of degeneration; the muscles all react well and promptly to the induced current. The hearing is fairly acute on the left side, slightly diminished on the right. There is no tremor of the face, nor speech defect. There is a simple tremor of the hands, of voluntary type, not marked. There is no specific history. The patient has three children, all healthy, but one is feeble-minded. There have been, so far as the patient knows, no nervous diseases in his family.

The diagnosis in this case presented some difficulties. The tremor which was noted was a simple tremor, of not sufficient intensity to warrant a diagnosis of multiple sclerosis. At the same time, the very long course of the disease—at least eleven years—was strongly suggestive of a sclerotic process of some kind. A hemi-lesion of the cord was ruled out, from the fact that paralysis and anæsthesia occurred on the same side of the body. Tabes dorsalis was excluded by the absence of ataxia and the presence of knee-jerks; amyotrophic lateral sclerosis by the absence of the reaction of degeneration, and of marked atrophy and fibrillary contractions; so that the indications pointed strongly, by exclusion, to multiple sclerosis, which was the provisional diagnosis made just before the autopsy. A condensed statement of the post-mortem appearance of the central nerve tissues must suffice:

The brain substance appeared normal throughout, except that there was a grayish-looking patch in the left middle peduncle of the pons about the size of a pea, and another in the lower part of the medulla. All through the spinal cord, but especially in the cervical and dorsal portions, there were grayish translucent patches, scattered irregularly, and involving white and gray matter alike. On microscopical examination, these were found to be patches of sclerosis, in which were many naked axis cylinders, as seen in both gold chloride and nigrosine sections. The Weigert stain showed few, if any, normal myeline sheaths in these areas, but occasional drops of disintegrated myeline.

As an obverse of the fact that many cases of multiple sclerosis occur which do not show the characteristic tremor at any part of their course, we have the occurrence of typical tremor, exaggerated reflexes, and other signs of multiple sclerosis, when the autopsy fails to show any lesion whatever. These

cases were first described by Westphal, and are obviously analogous to cases of paralysis agitans; they show with the latter the seeming anomaly presented by a disease, so far as we know, purely functional, yet running a progressive course, and regularly ending in death. The fact that typical symptoms of multiple sclerosis may occur in a case which after death presents no lesion, makes particularly difficult a diagnosis in those cases which have some of the symptoms of multiple sclerosis, and others of paralysis agitans. Such a mixture is presented in the two following cases, the first of which is of probable organic origin, the second probably functional.

M. E., a man, fifty-one years of age. The patient was thrown out of a buggy nine years ago, was unconscious two or three minutes, but made a good recovery without further symptoms. About eight years ago a tremor began in the right hand, which gradually extended to the right leg, and since he had the "grippe," a few months ago, the left hand and leg began to be involved. He has had feelings of soreness and weakness in the extremities, and subjective feelings of heat and cold are very marked. He often wakes in the night and finds himself sweating. When he combs his hair he has a pain over the right eye. The right side of the face was the part injured when he was thrown out of the buggy. He has a good deal of headache over the right eye.

On examination, the right hand is held in the writing position; there is no tremor in it, except during voluntary motion. When he attempts to put his finger on his nose there is marked tremor, coarse in character, and increasing as the action proceeds, until toward the end of the movement the excursion of the hand is very wide and violent. There is a comparatively slight tremor of the same kind in the left hand on voluntary motion. The gait is rather hesitating, stiff, and slow, with the body not much bent forward. The pupils are equal, and react to light. There is no nystagmus, but as the patient follows the finger with his eye there is tremor of the head and in the orbicularis palpebrarum. The deep reflexes are fairly marked in both the upper and the lower extremities. The knee-jerk is stronger on the right than on the left side. There is no ankle clonus. Sensibility is acute in the face and in all four extremities. All of the muscles of the upper extremities react well and promptly to the faradic current, and with the galvanic current CCC > AnCC.

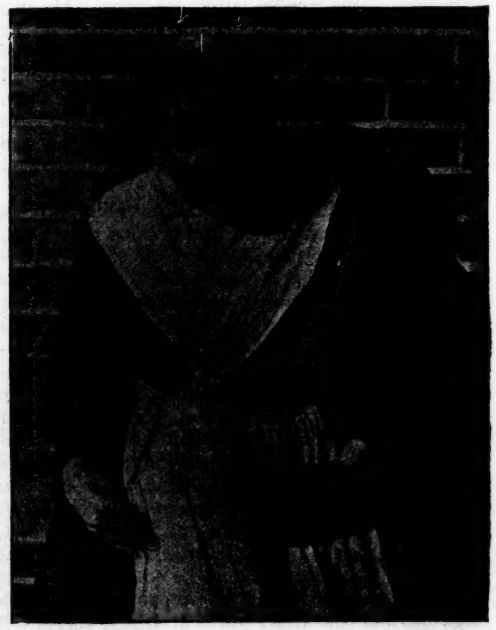
The grasp of the right hand is considerably weaker than is that of the left. The patient, formerly a good whistler, is now unable to whistle, and has a good deal of trouble in managing his food when he eats, the muscles of the mouth being weaker on the right side. The tongue is not deviated on protrusion.

In this case the subjective feelings of heat and cold, the writing position in which the hand is held, and the slow and stiff gait, are, at first sight, strongly suggestive of paralysis agitans. On the other hand, the fact that tremor only occurs during voluntary movement, and, still more, the fact that it is coarse and slow, compared with the finer tremor of shaking palsy, is strongly indicative of a sclerotic lesion. On closer examination, the muscles are not found to be so rigid as is the case in shaking palsy, and the position, although stiff, is not the typical bent posture, as appears in an accurate photograph of the patient in his habitual attitude. We have, therefore, in all probability, to do with a patch, or patches, of sclerosed tissue in the brain, and very likely in the neighborhood of the optic thalamus.

Hydrobromate of hyoscine, given in doses of $\frac{1}{200}$ to $\frac{1}{100}$ of a grain, has had, in this patient, little, if any, effect on the tremor.

The following case is, in most respects, a fairly typical one:

S. G., a woman, seventy-three years of age. The patient, who had always been a strong, hard-working woman, began three years and a half ago to notice a weakness in the third finger of the right hand, and this spread so as to involve the whole hand. Finally, a tremor began in the right hand, and spread gradually to the left hand and to both legs. The patient is



now unable to walk; when she attempts it she starts very slowly, and has a tendency to fall forward. When standing she must support herself by holding to something. The patient always feels hot now; can bear few, if any, bed-clothes on her bed; is very lightly clad, even in winter, and complains constantly of the heat. She has had no headache, no double vision.

On examination, the patient has a marked and rather coarse tremor, affecting all four extremities and the orbicularis oris. The tremor is continuous, easily controlled, so that it ceases during voluntary movement, and has a rhythm, as nearly as can be counted, of two hundred to two hundred and fifty per minute. Muscular power is much lessened; the grasp almost nothing on the right side, weak on the left side. Sensation to tactile and painful impressions is acute all over the body. The triceps and knee reflexes are fairly marked, not exaggerated. Pupils equal and react to light. None of the muscles appear wasted, except the extensor muscles of the right forearm and the small muscles of the right hand; these appear smaller than the corresponding muscles on the left side. The reaction to the faradic current is normal in the muscles of the upper extremities, except in the extensors in the right forearm; here the reaction is either absent, or so slight as to be entirely obscured by the constant tremor. The small hand muscles react well. The position of the body as shown in the photograph, a reproduction of which is given, almost suffices for a diagnosis in this case.

Although the symptoms began with weakness rather than with tremor, and there is marked wasting of one muscle group, the remaining symptoms are so typical that probably no lesion would be discoverable on autopsy, and the case must, therefore, rank as one of paralysis agitans.

A LARGE VAGINAL ENTEROCELE COMPLICATING PREGNANCY AND OBSTRUCTING LABOR.

BY BARTON COOKE HIRST, M.D.,
OF PHILADELPHIA.

VAGINAL hernia, with a vaginal enterocele large enough to cause mechanical difficulties in labor, must be one of the rarest complications in the child-bearing process. Many text-books do not refer to it, and those which do have a perfunctory account as though the writer had no personal experience in the method. For example, in *Müller's Handbuch*, in many respects the most complete work on obstetrics of recent times, the whole subject of hernia as a complication of pregnancy and labor is granted but sixteen lines, and this in a work of 2381 pages. Vaginal hernia is dismissed in a very curt fashion as follows:

"The intestines may be pressed downward between the bladder and uterus through a fissure in the pelvic floor, so that they may be felt between the lateral vaginal and pelvic walls, or until they reach the corresponding labium. So also may the intestines, in the same manner, make their way downward behind the uterus, and between the anus and the genitalia may give rise to the so-called perineal hernia. These ruptures, especially during the exit of the head, may become exceedingly serious by compression of the sac-contents; the early reduction of the hernia is therefore indicated. If this is impossible, and there is danger from pressure by the head, the termination of labor by the forceps is required."

In the Maternity of the University of Pennsylvania I have had recently under my charge the case of vaginal hernia in a pregnant and parturient woman about to be described. Stimulated by this experience, I am engaged in a search through medical literature for similar cases, with the idea, in the near future, of writing a more extensive paper on the subject. I would, therefore, be very much indebted to any fellow-practitioner who would tell me of unpublished cases in his own or others' experience:

Mrs. B., aged forty-three, has been pregnant fifteen times, and has had only three premature deliveries. Her last pregnancy was ten years ago. In this she went to term, and fell into labor without medical attendance. She had been in labor six to eight hours with hard pains, when suddenly a large tumor, "as big as a child's head," was seen protruding from the vulva. Two old women, who were with the patient, superintended the delivery two hours later, pulling the tumor forcibly to one side while the child's head was emerging from the birth-canal. After delivery the tumor disappeared, and the woman was only conscious of its presence, in the following years, a day or two before each menstrual period, when it "came down a little." She menstruated for the last time April 4, 1890. Two months later the protrusion became marked, and began to trouble her. The tumor then increased steadily, she suffered more from it daily, and finally took to her bed on October 20th. She was brought to the University Hospital on November 3d. She was then in a wretched condition.

Her bowels had only operated once in the past three weeks; her pulse was 140; her temperature slightly elevated. She was too weak to stand without assistance, and had an extremely anxious expression, although not at all of a nervous temperament. The urine was very high colored and contained pus. A tumor projected from the vulva covered with vaginal mucous membrane, measuring on its exposed surface 2 inches antero-posteriorly, 1⅛ inches transversely. The projection, she said, had been very much larger two weeks ago, before she went to bed. At first sight it seemed as though the tumor inverted the posterior wall of the vagina, but a closer inspection showed that it sprang from the right side, but pressed the right vaginal wall so far to the left that the vaginal canal was reduced to a small passage running directly behind the symphysis pubis. The cervix was reached with great difficulty—an inch above the symphysis pubis and close to the anterior abdominal wall. The tumor occupied all the space within the pelvic cavity, pressing upon the bladder in front and the rectum behind. The forefinger in the rectum and the thumb in the vagina could grasp the mass distinctly, and were as widely separated as the antero-posterior diameter of the pelvis would allow; they could, however, be approximated until they met, except for the rectal and vaginal walls, partly by slight displacement of the tumor upward, but mainly by compression of its contents. The tumor

had the characteristic feel of a hernia and evidently contained no fluid. The portion of the tumor projecting from the vulva was not resonant, but the impulse on coughing was very distinct. The signs of pregnancy were plain.

A diagnosis of vaginal hernia was made. The bowels were opened for the first time in two weeks by three compound cathartic pills and an ounce of castor oil. By rest in bed, regulation of the diet and bowels, and an irrigation of the bladder, the patient's general condition became quite satisfactory. She was still troubled, however, by constant bearing-down pains, which had commenced early in the pregnancy, and continued incessantly, causing her much suffering. On November 21st (231st day since beginning of last menstruation) the membranes ruptured while the patient was lying quietly in bed. Eight hours later the os was sufficiently dilated to admit two fingers. The woman was then anæsthetized. Passing the whole hand into the vagina and displacing the tumor laterally, I found a presentation of one knee. The corresponding foot was seized and brought to the vulva. The gradual extraction which followed occupied two and one-half hours. As the body descended and the head entered the pelvis, the tumor protruded from the vagina to an enormous extent and distended the right side of the pelvic floor and the perineum. Two assistants pulled the tumor off to the right while I extracted the head quickly, but with great force. The child was alive when born, but deeply asphyxiated. It was revived, but died the next day.

The subsequent course of the case as regards the woman was entirely satisfactory. The puerperium was afebrile and uncomplicated. Two weeks after delivery I examined the patient and made the following entry in my case-book:

Tumor still felt on right side, extending down to the pelvic floor, covered by little more than skin, to the right of the posterior commissure of the vulva. The tumor increases in size as one follows it up in the pelvis until, at the level of the cervix, to the right and behind, it is as large as an orange. It can be displaced upward to a slight extent, but it is impossible to reduce it. The impulse on coughing is plainly to be seen on the right side of the pelvic floor.

The woman was advised to return to the hospital for an operation in case she suffered from the hernia.

248 SOUTH SEVENTEENTH ST.

ORIGINAL LECTURES.

ON THE IDENTITY OF SO-CALLED SPECIFIC AND NON-SPECIFIC URETHRITIS.

BY HENRY J. REYNOLDS, M.D.,
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PROFESSOR OF DERMATOLOGY IN THE COLLEGE OF PHYSICIANS AND SURGEONS; DERMATOLOGIST AND GENITO-URINARY SURGEON TO THE WEST SIDE FREE DISPENSARY.

GENTLEMEN: We find in this case, as you see, a discharge from the meatus which is purulent or mucopurulent in character. As a pathological product of this character is always indicative of inflammation, it is very evident we have here an inflammation of some portion of the genito-urinary tract; and as the same condition which prevents a continuous flow or discharge of urine from the bladder would naturally prevent a discharge from the meatus, as we find the case here, should it come from any point posterior to the urethra, the natural inference is that in this case the inflammation is located in the urethral canal; and while this may seem a roundabout way of saying that the gentleman has the clap, it is always advisable, in pursuing a scientific study, to take up the subject thoroughly and systematically. We have in this case, in other words, a urethritis; a condition which may perhaps with propriety in every case be termed a gonorrhœa. In this connection, however, I must not neglect to state that the word *gonorrhœa* or *clap* should be used with considerable discretion, inasmuch as to the laity it usually indicates a disease which has been derived by contagion or impure contact.

Two forms of urethritis have been described by many authors, the one being termed *specific* urethritis, which was supposed in every case to be the result of contagion, and to which has also been given the name *true* gonorrhœa; and the other, *simple* or *non-specific* urethritis, to which they regarded the word gonorrhœa or clap inapplicable, and which has sometimes been termed "bastard gonorrhœa."

Before proceeding further, it is perhaps advisable to consider more fully the question of the identity or non-identity of these two so-called forms of urethritis. The chief points or characteristics upon which observers have endeavored to establish the non-identity of so-called specific and non-specific urethritis, I will endeavor to illustrate by the following diagnostic table:

Specific.	*Non-specific.*
1. The result of contagion.	1. Not specific.
2. Disease well pronounced	2. Mild.
3. Long duration.	3. Short duration.
4. Stubborn to cure.	4. Yields readily to remedies.
5. May be communicated by contact.	5. Not communicated by contact.
6. Discharge contains specific microbe.	6. Discharge does not contain specific microbe.

It is, I believe, principally upon these differential points that certain observers endeavor to establish the dual character of so-called specific and non-specific urethritis. Now, let us see if they are really sufficient to constitute distinct diseases, or whether there is any essential element in one that may not exist or be developed in the other.

In regard to the first differential point, *contagion*, it is undoubtedly true that the discharge from one urethritis may convey the disease to another, while the discharge from another urethritis will not be capable of reproducing itself in another individual by contact. It is, however, in all probability true that the disease containing the contagious element (specific), may and does lose its contagious quality or character in certain stages of its course. In other words, it is probable that even the contagious or so-called specific form of the disease is only so at a certain time, and that during a certain period in its progress it loses its contagious character, when it, of course (as regards the differential point of contagion), becomes identical with the so-called simple

or non-specific urethritis. That this change takes place will be admitted by nearly everybody, but a few will argue that the disease, when this change takes place, is, to all intents and purposes, cured, the gonococcus having been, for instance, destroyed. But such is not the case, for this same condition may even yet be aggravated so that it may return to its original profusely purulent contagious character (wherein the gonococcus may be found). That this is true the clinical experience of every practitioner will indicate, and that it is not so, has never been and cannot be shown. It would, therefore, seem that the contagious character of the so-called specific disease depends rather upon the stage or activity of the inflammation than upon the particular *kind* of inflammation. So much, then, for the behavior of the so-called specific form.

Now, on the other hand, as to the action of the so-called *simple* form of the disease; there is great evidence to show that an inflammation arising from natural causes, or more correctly speaking, without the etiological factor of contagion, and one wherein the pathological product is not at first contagious or capable of reproducing itself by infection (*simple* or *non-specific*), may and does become *contagious* in character. This condition of affairs, I think, we frequently see in inflammations of the conjunctiva. The disease having arisen idiopathically, when developed, remains for a certain time simple or non-contagious, but eventually, if subjected to bad hygienic and therapeutic conditions, becomes aggravated into a purulent disease which is eventually contagious; and to reason by analogy, there is probably no valid reason why a simple inflammation of the urethra may not go through the same course, and by aggravation eventually become contagious in character. This being the case—and it has never been and cannot be proven to the contrary—we have a so-called simple or non-specific or non-contagious urethritis, arising independent of contagion, eventually developed into a so-called specific or contagious urethritis; and we likewise have a specific or contagious urethritis eventually, before the complete disappearance of the discharge, mitigated into a non-contagious or simple urethritis. Hence, this being the case, either form of the disease is susceptible of development into the other so-called form—a fact which must prove conclusively that the deviations in character of the so recognized two forms of the disease are but different stages of, or indicate different degrees of activity of, one and the same disease.

In regard to the second recognized point of distinction between *specific* and *non-specific*, it is no doubt true that the disease developed from contagion is, as a rule, more pronounced or violent in its symptoms than one arising from natural causes independent of the element of infection. But there is nothing about this differential point that can in itself show any essential difference in character between one form of the disease and another, other than that of degree.

In regard to the third and fourth points that are claimed to differentiate the so-called specific and non-specific cases, there is nothing about the *activity* of the disease, its *long duration*, or its *unyielding* character that can in any way indicate an essential difference in character from a mild form of the disease, which is of short duration and yields to treatment, other than that of *degree* (but not of *quality*). These points do not establish a difference in quality any more than a confluent eruption indicates that smallpox is a different disease from varioloid with its scanty, discrete eruption.

In regard to the fifth differential point, there is no doubt, as shown in speaking of the first differential symptom, that one urethritis differs from another as regards its *communicability*, but this, as shown in discussing the first differential symptom, does not necessarily establish the essential difference in quality, inasmuch as the simple may be aggravated into the so-called specific or contagious, and that the contagious, as most everybody must admit, may be so mitigated as to eventually become non-contagious—a condition which only refers to *degree* or *activity*, and not to *quality*.

With reference to the last or sixth differential point, we now come to consider the hobby or pet of the micropathologist, and this brings up a question which has never been settled, as to whether this little atom is the axis upon which the disease revolves or *vice versa*. It is undoubtedly true, as has been known during all ages, that a contagious disease necessarily contains elements of some character, microscopical or otherwise, which do not exist in the non-contagious disease. Certain microscopic bodies, however, have been noted as existing in certain diseases which it has been claimed (not, however, proved) constituted the only essential element of contagion; or which are, in other words, the germs of disease. Not to enter at the present time into a discussion of the subject of bacteriology, it is sufficient to state that something has been discovered in the pathological product or discharge of one urethritis, which it is claimed does not exist in another, and which has been termed the micrococcus gonorrhœæ, gonococcus, etc. The discovery of this element has of late years, especially by the advocates of the germ theory, been the strongest point of argument in favor of the non-identity of the so-called specific and non-specific urethritis, it being claimed by Neisser, Bumm, and certain other investigators that this element was to be found in a contagious gonorrhœa or urethritis, and was not to be found in a non-contagious urethritis. Now, even if this be the case, it would not be sufficient to convince every careful reasoner that the disease in which the element is found was from first to last essentially and entirely distinct from the other. In the first place, I think it cannot be proven that these elements or so-called germs contain exclusively the contagious elements of the disease. In other words, it has never been proven that a simple condition wherein these elements do not exist cannot be aggravated and developed into a condition where they will eventually be found. Further than this, it has never been conclusively shown that these elements are peculiar to, and are to be found only in, a contagious gonorrhœa. Other investigators have found bodies which they claim to be identical, not only in non-contagious inflammations of the mucous membrane, but also in other secretions and fluids of the body.

To sum up: The germ theory fails to establish a distinction between the so-called specific and non-specific urethritis, and as careful reasoning and analogy seem to show conclusively that a mild, non-contagious inflammation may be aggravated and developed into a contagious one, and that a contagious one may become so

mitigated as to eventually become non-contagious in character, I fail to see, like many other observers, any substantial reason why the subject should be complicated by endeavoring to establish the existence of two distinct forms of urethritis, where, in reality, only one disease exists. Every case of the disease I would simply term urethritis or gonorrhœa (for reasons as previously suggested), making, however, very cautious use of the term gonorrhœa.

163 STATE STREET.

MEDICAL PROGRESS.

Prescription for Whooping-cough.—VON GENSER is said to use the following prescription in the treatment of whooping-cough:

℞.—Carbolic acid . . . . 1½ grains.
Rectified spirit . . . . 2 drops.
Tincture of iodine . . . 5 "
Tincture of belladonna . . 10 "
Peppermint water . . . 2 ounces.
Simple sprup . . . . 1 drachm.

To a child of two years a teaspoonful of this mixture may be given every two hours.

Hyperæsthesia of the Larynx.—The *Revue General de Clinique et de Thérapeutique* gives the following treatment of MOURE for those hysterical cases of hyperæsthesia or anæsthesia of the larynx. Internally he prescribes large doses of bromide of potassium for hyperæsthesia, or the sulphate of strychnia to those who have anæsthesia.

Externally he makes application of the following on each side of the larynx:

℞.—Hydrochlorate of cocaine, dissolved in alcohol . . . 2 grains.
Metallic iodine . . . . ½ grain.
Iodide of potassium . . . 1½ grains.
Laudanum . . . . 15 drops.
Pure glycerin . . . . 1½ ounces.

Or,

℞.—Hydrochlorate of cocaine, dissolved in alcohol . . . 4 grains.
Laudanum . . . . 15 drops.
Bromide of potassium . . 45 grains.
Pure glycerin . . . . 1 ounce.

Or in other cases morphine may be used in place of the cocaine as follows:

℞.—Hydrochlorate of morphine . 2 grains.
Metallic iodine . . . . ½ grain.
Iodide of potassium . . . 1½ grains.
Pure glycerin . . . . 1 ounce.

Injections for Hypertrophy of the Prostate.—*La Tribune Médicale*, gives the following prescriptions from the practice of KOBNER for the relief of hypertrophy of the prostate:

℞.—Iodide of potassium . . . 45 grains.
Bromide of potassium . . ½ drachm.
Extract of belladonna . . 4 grains.
Water . . . . . 6 ounces.

This is enough for 20 rectal injections. Six drachms of this solution in from two to four ounces of hot water may be employed once or twice a day or the following may be used:

℞.—Iodide of potassium . . . 2½ drachms.
Bromide of potassium . . 2 "
Extract of belladonna . . 8 grains.
Water . . . . . 10 ounces.

Six drachms of this may be injected twice a day into the bowel.

Five to ten drops of pure tincture of iodine may be placed in the liquid if the large intestine will bear it.

Treatment of Whooping-cough.—Löffler recommends the following solution to be used in the treatment of whooping-cough:

℞.—Freshly prepared chloride of silver . . . . . 1½ grains.
Water . . . . . 2 pints.
Hyposulphite of sodium, a saturated solution.

Use by an atomizer, the liquid being directed into the pharynx. Repeat the application every two or three hours. This treatment is both prophylactic and curative.

Treatment of Jaundice.—According to *La Semaine Médicale*, Carreau employs with great success the oil of turpentine in large doses in the treatment of severe jaundice. He believes that its value depends upon its diuretic and hæmostatic properties, and he uses it in all conditions of severe disease, such as in infectious jaundice, bilious fever with hæmoglobinuria, and yellow fever, particularly if anuria and hæmorrhages are present. In grave cases as many as sixty capsules, containing two or three drops, are given in thirty-six hours, the dose being given as frequently as every half hour. Where vomiting prevents their action he administers oil of turpentine hypodermically in the following formula:

℞.—Ozonized oil of turpentine . . 2½ drachms.
Liquid vaseline . . . . 3 ounces.

The following cases are detailed by Carreau as instances in which this treatment was of service. The first of them was that of a woman suffering from severe icterus with profound coma and uræmic convulsions. Three drops of the turpentine were given every half hour for the first few hours, and after that two drops. Simultaneously with the appearance of the peculiar violet odor of the urine, produced by the turpentine, the albuminuria decreased, the coma became less, and soon passed into simple somnolence, so that convalescence was soon established.

The second case was suffering from yellow fever, accompanied by persistent vomiting, and in this instance twenty-three hypodermic injections of oil of turpentine were made in thirty-six hours. The symptoms rapidly ameliorated, and the patient recovered, although he afterward suffered from two abscesses as a result of the injections. In still another case which was suffering from bilious fever with hæmoglobinuria, the administration of the turpentine every hour or hour and a half was without effect, and it was only when three drops were used that the symptoms rapidly ameliorated.

The Treatment of Diphtheria.—Löffler recommends the following gargle in the treatment of diphtheria:

℞.—Carbolic acid . . . . 15 drops.
Alcohol . . . . . 2 ounces.
Distilled water . . . . 5 "

This should be used as a gargle.

In other cases a solution of 1 to 2000 of corrosive sublimate can be used in the same manner, or the following antiseptic mixture, which is not poisonous, may be employed:

℞.—Thymol . . . . . 15 grains.
Alcohol . . . . . 3 ounces.
Water . . . . . 12 "

It is stated that the gargle of corrosive sublimate acts generally more favorably than does that containing carbolic acid.

Treatment of Cancer of the Stomach.—*Journal de Médecine de Paris* states that Dujardin-Beaumetz secures gastric antisepsis in cases of cancer of the stomach by the use of salicylate of bismuth, naphthol, or salol, prescribed in the form of capsules, made as follows:

℞.—Salicylate of bismuth
Calcined magnesium
Bicarbonate of sodium } of each 2½ drachms.

To be made into 30 capsules, or,

℞.—Salicylate of bismuth
Betanaphthol
Charcoal } of each 2½ drachms.

To be made into 30 capsules, or, again,

℞.—Salicylate of bismuth
Salol
Bicarbonate of sodium } of each 2½ drachms.

To be made into 30 capsules.

For the relief of the pain he uses laudanum, or opium pills, or hypodermic injections of morphine associated with atropine, as, for example, in the following prescription:

℞.—Hydrochlorate of morphine . 1½ grains.
Neutral sulphate of atropine . $\frac{1}{10}$ grain.
Sterilized water . . . . 6 drachms.

Twenty or thirty minims of this may be given at a dose.

The objection to this treatment is that the constant use of morphine may produce the morphia habit, but in the majority of instances the disease progresses so rapidly that this danger is not of any importance. The diet should be absolutely vegetable in its character. The stomach should be allowed to rest as much as possible, and the physician endeavor to use such foods as will be digested by the intestine. This is particularly important in view of the fact that in the majority of the cases of cancer there is a diminution in the digestive activity of the gastric juice. When the cancer is at the pylorus, lavage may be practiced, but if it be at the cardiac end of the stomach this measure is not to be resorted to. The solution employed in washing out the stomach should consist of naphthol in the proportion of 1 to 1000.

Prescriptions for Flatulence.—*Journal de Médecine de Paris* gives the following prescriptions for the relief of flatulence:

℞.—Naphthol . . . . . 1 drachm.
Carbonate of magnesium . . 1 "
Powdered charcoal . . . 1 "
Essence of peppermint . . 2 drops.

This is to be divided into 15 powders, and 1 taken at the beginning of each meal.

When the flatulency is accompanied by constipation the following may be used:

℞.—Magnesium . . . . . 1 drachm.
Flowers of sulphur . . . 1 "

To be made into 15 powders, 1 of which is to be taken at each meal.

When diarrhœa accompanies the flatulency:

℞.—Bicarbonate of sodium . . 30 grains.
Prepared chalk . . . . 15 "
Powdered nux vomica . . 3 "

May be made into 10 powders, 1 of which is given with each meal.

In still other cases, where neuralgia of the stomach or true gastralgia accompanies the tympanites.

℞.—Hydrochlorate of cocaine . . 4 grains.
Quinine sulphate . . . 6 drachms.
Cinnamon water . . . 8 ounces.

Distil, and order a tablespoonful every two or three hours.

The Prevention of Ophthalmia Neonatorum.—The *Revue Générale de Clinique et de Thérapeutique* gives the following treatment used by Valenta for the prevention of this dangerous affection of the new-born. After pointing out that Credé's method, that is, the instillation of solutions of nitrate of silver, possesses many dangers, he proposes that we replace this liquid by solutions of permanganate of potash. The solution which he employs is sufficiently concentrated to be of a dark-red color. This is to be applied to the eyelids by means of a cotton tampon, and immediately afterward by the aid of another tampon the conjunctival sac is to be cleansed. These operations should be performed immediately after birth if they are to be successful.

Treatment of Granular Blepharitis by Ethylate of Sodium.—Symons (*Revue Générale Clin. et Thér.*, March, 1891) prefers this treatment to that by nitrate of silver. It is less painful and causes no reaction. The following is the method: He everts the eyelid and anæsthetizes the conjunctiva with cocaine; then he touches the granular surface with a point dipped in the sodium, cleaning off with a cotton tampon any excess of the agent. Finally, to diminish the caustic action of this substance, he advises the addition of several drops of chloroform.

Toxic Action of Exalgine in Large Doses.—Conning Hartley observes, in *Revue Générale Clin. et Thér.*, March, 1891, that, contrary to those who affirm the harmlessness of this substance, he has seen repeated accidents following its use.

Five minutes after the administration of methyl-acetanilide the patient lost consciousness, suffered intense pain, and was unable to speak, from dyspnœa; pallor of the face was intense. He observed an irregular heart-beat and weak pulse, with profuse perspiration. These accidents are those usually thought to accompany syncope.

Abdominal Hernia.—WOLF, in the *Revue Générale de Clinique et de Thérap.* (March, 1891), gives the following conclusions arrived at by Schrede in regard to the radical operation for abdominal hernia. In 165 operations performed by Schrede for the relief of strangulated inguinal, and 69 for strangulated femoral hernia, there were 2 per cent. of deaths, and 29.5 per cent. of certain successes. By the term "certain" is meant that the hernia did not return within one year. These conditions are the most favorable for the success of the operation: ligature of the sac, and as much tissue as possible; extirpation of the latter; suture of the orifice by which the hernia produced itself; finally, division of the inguinal canal. Schrede prefers to use a metallic suture. Extirpation of the sac simplifies the rest of the operation.

Antiseptic Papers.—For application over wounds or bandages antiseptic paper prepared in the following manner is stated by *L'Union Médicale* to be of value:

℞.—Bichloride of mercury . . 2½ drachms.
Pure glycerin . . . . 6 "
Distilled water, which has been boiled and cooled } 1 pint.

Filter-paper is to be impregnated with this solution and applied where needed.

Treatment of Broncho-pneumonia in Children.—According to *L'Union Médicale*, SIMON recommends the following prescription in the early stages of this condition:

℞.—Acetate of ammonium . . 7 grains.
Tincture of aconite . . 15 drops.
Codein . . . . . 2 grains.
Simple syrup . . . . ½ ounce.
Water enough to make . . 3 ounces.

A teaspoonful of this may be given every hour until five or six doses are taken. At the beginning of an attack a mustard plaster or other form of counter-irritation should be applied over the thorax, and after it has acted for one or two hours should be followed by an emollient poultice. It is also well to allow steam from boiling water to pass into the air of the sick-room.

Parasiticide Ointment.—*L'Union Médicale* gives the following ointment for the removal of parasites:

℞.—Salicylic acid . . . . 45 grains.
Borax . . . . . 15 "
Balsam of Peru . . . 30 "
Etherial essence of anise . . 5 drops.
Essence of bergamot . . 20 "
Vaseline . . . . . 6 drachms.

Make into an ointment and apply to the part affected.

Treatment for Coryza.—*Gazette Médicale de Liège* recommends that in acute coryza a small tampon impregnated with the following solution shall be passed into the nares:

℞.—Hydrochlorate of cocaine . 15 grains.
Distilled water . . . 1½ ounces.

This application may be made twice a day, and should be continued for twenty minutes until the pain and congestion of the mucous membrane is relieved. By this means the frontal headache will be removed, and a complete cure may be obtained.

Powders for Indigestion.—*L'Union Médicale* states that DUJARDIN-BEAUMETZ uses the following powder in the treatment of dyspepsia:

℞.—Subnitrate of bismuth
Carbonate of magnesium
Prepared chalk
Phosphate of sodium } of each, 2½ drachms.

This is to be divided into forty powders, and 1 powder taken after each meal.

Treatment of Erythema of the Eyelid.—BROCQ, in the *Revue d'Ophthalmologie*, states that he employs the following ointment in the treatment of erythema and swelling of the eyelids:

℞.—Salicylic acid . . . . 7 grains.
Lactic acid . . . . 7 "
Resorcin . . . . 10 "
Oxide of zinc . . . . 30 "
Pure vaseline . . . . 5 drachms.

Care should be taken that none of this ointment enters the eye.

In other cases the following ointment may be applied:

℞.—Salicylic acid . . . . 15 grains.
Pyrogallic acid . . . . 30 "
Vaseline . . . . . 15 drachms.

This treatment is to be applied at night, and it may be alternated with that containing resorcin just given.—*L'Union Médicale.*

Ointment for Phthisis.—*L'Union Médicale* states that the following ointment is useful in the treatment of pulmonary phthisis:

℞.—Creasote . . . . . 2½ drachms.
Lanolin
Olive oil } of each, . . . 1½ ounces.
Lard

This ointment is to be applied with friction each night to the thorax, and the absorption of the creasote from the skin will be of value to the patient.

Treatment of Bed-sores.—BILLROTH is stated to apply the following treatment for bed-sores: Upon the appearance of reddening of the skin he applies a lotion of vinegar or lemon-juice. If excoriation is present, he applies nitrate of silver, and protects the part by zinc ointment or soap plasters. Where gangrene comes on, antiseptic compresses are to be applied, the wound being cleaned by the use of chlorine water, or carbolated oil may be used with care as the phenomena of intoxication may appear. Internally, he employs supportive treatment with wine, acids, quinine, and musk.

CURRENT LITERATURE.

SATURDAY, APRIL 18, 1891.

ALBUMINURIA IN RENAL LITHIASIS.

Marboux (*Lyon Médical*, January 25, and February 8, 1891) has noted the existence of albuminuria in subjects afflicted with established gravel, but whose general health is maintained, and who appear to be benefited by a course of mineral waters. Whenever the urine of a patient is found to contain albumin, an explanation of this vice of secretion should be searched for in the following directions:

1. Has the albuminuria any relation to gravel, is it due to a physiological disposition, to a traumatism, to a dyscrasic state engendered by a recent eruptive fever, or to an attack of renal catarrh?

2. Is it the result of a renal inflammation, engendered it may be by lithiasis, but developing alongside and independently of it?

3. Is it intimately connected with a lithiasis, an agglomeration of sediment, a migration of stones, and does it constitute a passing accident consequent upon the renal congestion arising from the injury to the mucous membrane of the canaliculi? In other words, is it, properly speaking, the albuminuria of gravel?

It is a simple thing to distinguish between *traumatic* and *scarlatinal* albuminuria. *Physiological* albuminuria should be suspected when the urine appears to be normal in every respect, and the quantity of albumin very small, especially if the subject is known to be a heavy eater, or if he has been exposed to great muscular fatigue or depressing emotions. This physiological or functional albuminuria is usually transitory and intermittent, and disappears under the influence of the night's rest; the urine is not otherwise modified in its composition, there are no casts, but there is very often an excess of the crystals of the oxalate of lime. *Nervous* albuminuria is extremely rare, and when present is associated with lesions which are not compatible with a state of health. *Catarrhal* or *congestive* albuminuria is of frequent occurrence, especially in gouty individuals. Chronic Bright's disease is likewise a frequent cause of albumin in the urine. It is associated with certain fugitive, and but slightly prominent symptoms, such as troubles of the eyes, the sensation of dead finger, the sensation of cold flashes, the appearance of erratic œdemas, and the commencement of cardiac hypertrophy. Finally, the presence of albumin may be explained by the existence of gravel or renal lithiasis. Lécorché has formed four stages of this affection. The first consists simply in an excess of uric acid, which is noticed only by chemical analysis. A degree more pronounced corresponds to the presence of sand and gravel in the urine; this is the microscopic gravel. A degree more gives rise to small calculi capable of causing the pains of nephritic colic; this is gravel properly speaking. After this comes renal calculi as the last stage of the affection.

The pathogeny of the albuminuria of gravel embraces: 1. Alterations in the blood crasis; 2. Modifications of the pressure and flow of the blood in the renal vessels; 3. Alterations in the renal epithelium. The primary effect of the clogging of the uriniferous tubules is to hinder the excretion of urine, and to determine a renal congestion by pressing upon the vessels in the vicinity. To this interference of the circulation from mechanical obstruction is added an irritation of the epithelium, which is the second cause of the passage of the albumin into the urine. In review, the causes of the condition are mechanical interference with the circulation of the blood, obstruction to the emission of urine, the congesting influence of pain, injury to the mucous membrane, and, finally, alteration of the epithelium.

This albuminuria may be the first symptom of lithiasis, and the red deposit in the urinals will establish the diagnosis. The albuminuria is simply a protestation of the kidney against the foreign bodies which encumber it, injuring the mucous membrane, and irritating the glandular elements. The urine is limpid, contains a little albumin, is generally excessively acid, and in consequence permits a rapid deposit of urid acid. The deposit contains cells and epithelial casts, very rarely hyaline casts. Nephralgia, usually unilateral, is present in these cases, with lumbar weight and muscular twitchings. Nephritic colic may accompany albuminuria in its early stages during its course or in its convalescence.

The mineral waters are of service in these cases, if properly administered. They may be classed thus:

1. Those with a sodium base: sodium bicarbonate; strong (Vichy, Vals); weak (Royat).

2. Those with a calcium base: calcium bicarbonate (Pougues); calcium sulphate (Contrexéville, Vittel).

3. Those with a feeble undetermined mineralization (Evian).

If the albuminuria is physiological, there exists neither indication nor contra-indication to the use of these waters. In the scarlatinal form the sodium bicarbonate waters are contra-indicated. The calcium sulphate water of Contrexéville will be found of service. In advanced Bright's disease all hydromineral treatment should be avoided. In the albuminuria of gravel, where the mucous membrane is irritated and congested by the presence of the foreign bodies, the mineral waters relieve the condition by washing them out of the tissues.

A COMPARATIVE STUDY OF THE EFFECTS PRODUCED BY BULLETS OF LARGE AND SMALL SIZE.

Delorme and Chavasse (*Archiv. de Méd. et de Pharm. Militair.*, Feb., 1891) have recently made an extensive investigation of the effects produced by shots of various sizes fired from equal distances and travelling with the same rapidity. They have found that the difference observed between the actual projectile of the gun of 8 millimetres

(Lebel) and the lead projectile of the gun of 11 millimetres (Gras) lies, for the most part, in the greater force of penetration of the former, in the difficulty of its deformation, and in its smaller diameter. In both balls, especially when they encounter a resisting bone, the damage inflicted increases with the velocity. The shock produced is also increased with the velocity, and according to whether one bone or more be affected, but it is much more marked with the ball of the Gras gun. The explosive effects, in firing at short distance, are identical for the two projectiles. The orifice of cutaneous entrance, which is always associated with loss of substance for the two projectiles, increases with the velocity, but seldom exceeds the diameter of the vulnerating body. The hole of exit of the ball of 8 millimetres is usually as rounded as that of the ball of 11 millimetres. The smaller dimensions of the holes of entrance and exit end of the passage of the smaller ball approach more to the nature of subcutaneous lesions, which is a favorable circumstance for their more easy and rapid cure. Holes of exit of the diametrical dimensions of the index-finger or thumb, produced by either ball, indicates a comminuted fracture with free splinters; but, for the ball of 8 millimetres, a torn hole of exit, admitting the little finger, gives rise to a suspicion of this lesion. The same indications can be furnished by the holes of exit in the clothing. In firing from equal distances, without the zone of the explosive effects, it is found that the types of fractures remain the same for both projectiles; but at distances of from 300 to 800 metres the ball of 8 millimetres produces effects slightly different from those of the larger ball. These differences consist:

1. In a rending of the cortical layer at the point of contact with retrograde projection of the osseous particles in the line of entrance.

2. In the greater propulsion of the small fragments into the medullary canals.

3. In the breaking up and more complete separation of some splinters belonging to the second osseous wall traversed.

4. In the smaller quantity of splinters driven into the canal of exit; the passage through the muscles is clearer.

5. In the extension of the cracks to a smaller distance in the two fragments.

In short, aside from these common secondary differences, the gravity of the fractures produced by the two balls at these distances is almost the same. From 800 to 1200 metres for the ball of 8 millimetres, the comminution is less, the breaking up of the free splinters is not so frequent, the dislocation is less pronounced, and the projection of splinters into the passage of exit is not as considerable. Therefore, these fractures seem to be of less gravity than the others. For distances of over 1200 metres the ball of 8 millimetres appears to produce fractures comparatively more comminuted than the leaden ball of 11 millimetres. Fractures from direct perpedicular contact, which are frequent with the ball of 11 millimetres, become quite exceptional with the ball of 8 millimetres. Tangential contact is most often accompanied by isolated cracks upon the face opposed to contact with a ball of 8 millimetres slightly deformed. In the epiphyses and short bones both balls produce fractures, perforations, etc., of the same type. But here, taking out of consideration the explosive force, the ball of 8 millimetres seems to cause less extended general fissuring, less rending of tissues, a smaller number of splinters, and more numerous simple perforations. In short, the articular lesions made by the Lebel ball are, in general, less comminuted and less grave.

Upon flat bones the lesions are almost comparable, with the sole difference of the relative dimensions in the diameters of the two projectiles. Here still, the ball of 8 millimetres with less velocity produces a retrograde projection of splinters in the muscular passage of exit. In perforations of the skull the direction of the fissures is identical for the two projectiles according to the point struck. The holes of entrance and of exit of the distorted balls of 11 millimetres are relatively larger than those of the ball of 8 millimetres. With similar velocity the ball of 8 millimetres produces upon the bone disorders less grave than those of 11 millimetres. The smaller balls stop more rarely in the tissues than do those of 11 millimetres.

HYDATID CYST OF THE LIVER. ABLATION OF THE CYSTIC PORTION BY THE ELASTIC LIGATURE.

IN the *Bulletin de l' Académie de Médecine*, January 20, 1891, DUPLAY reports an operation performed by Terrillon for the relief of hydatid cyst of the liver. The patient was a woman, fifty-three years of age, who had always enjoyed good health until forty-seven years of age, when she suffered severely from violent pains in the right hypochondriac region. This painful attack lasted about six months, and was accompanied from time to time by bilious vomiting, but no jaundice. When the pains commenced to decrease, the patient noticed, for the first time, the existence of a tumor below the border of the right false ribs. This was diagnosed as a cyst due to impaction of gall-stones, and she was treated successfully by electricity and by other methods. She consulted Terrillon in 1889. At that time she was subject to painful crises, which occurred every five or six weeks, of more or less violence, lasting some days. There was considerable emaciation and general weakness. An examination revealed a tumor descending about four inches below the margin of the ribs, which was displaced by the respiratory movements. It was undoubtedly connected with the liver. Anteriorly the tumor did not quite reach the median line, while it was impossible to determine the posterior limit. A slight sensation of fluctuation could be elicited. An exploratory puncture revealed a colorless, transparent fluid. Upon the withdrawal of the fluid the size of the tumor was not sensibly diminished, which gave rise to the conclusion that the cyst was multilocular.

An incision for the removal of the tumor was made, about four and a half inches in length, parallel to the border of the right lower ribs. As soon

as the peritoneum was incised the tumor was revealed, more mammelated, and of a less violaceous color than the healthy hepatic surface. The gall-bladder was healthy. The incision was lengthened and the whole cyst of the size of two fists was revealed. A line of demarcation, very distinct, existed between the diseased and healthy tissues of the liver. There was no depression at this point, but the difference lay in the coloration and consistency of the parts. There being no pedicle, ablation of this portion of the liver would be attended with danger of hæmorrhage. After some consideration, it was decided to pass a rubber tube tightly around the cyst, as is done in the case of uterine fibroids, so as to produce an artificial pediculation of the diseased portion of the liver, which was strangled in this manner. It became turbid and violaceous in color, and swelling occurred, which held the ligature firmy *in situ*. The mass was then held in place between the lips of the abdominal wound by means of a suture upon either side. It gradually sloughed off, and was removed on the seventh day. The wound was entirely healed by the thirtieth day.

DIAGNOSIS OF RENAL CALCULUS, AND ITS OPERATIVE TREATMENT.

Nephro-lithotomy, according to James Israel, is intended to remove stone from the kidney before the kidney has suffered irreparable damage from the presence of the foreign body; while nephrotomy is applicable when pyo-nephrosis, atrophy of the kidney from pressure, and inflammatory changes in it, have so altered the kidney that its restoration in complete integrity is impossible. Nephrotomy is among the most frequent of surgical operations upon the kidney, but nephro-lithotomy is, in Germany, still rare. Israel reports a case occurring in a man forty-one years old. The patient had had pain in his left side since his apprenticeship, but from the spring of 1884 the pains became violent and were accompanied occasionally with vomiting, but without colic, so that for two years he was treated for disease of the stomach. Since 1886 the attacks of renal colic became steadily more violent and more frequent. The pain shot into the inguinal canal, to the left knee, and upward to the shoulder. The character of the pain was boring and unbearable, so that the patient had to twist and writhe. In addition to the paroxysms of pain, the patient had a permanent pain in the region of the left kidney. Hæmaturia occurred occasionally; the urine was strongly albuminous. The violent pains occurred nearly every night about one o'clock, so that the patient was unable to remain in bed. There was considerable emaciation and loss of strength. Finally the pain became unbearable, and on January 18th Israel operated with the consent of the patient. The urine before operation contained scattered red blood-cells, though it was clear in color. The constant occurrence of this, or its occurrence after movement, Israel regards as of great diagnostic importance. Palpation detected no enlargement of the kidney, but pressure both in front and behind was painful.

The operation was performed January 18, 1890. An incision was made below the twelfth rib and parallel to it, extending fourteen centimetres forward from the external border of the sacro-lumbalis muscle. The kidney, which was not enlarged, lay surrounded by the several fibrous layers of the fatty capsule. The latter was loosened from the posterior surface as far as the pelvis of the kidney, and, when no stone could be felt there, from the anterior surface also, so that the kidney and its pelvis could be subjected to the most careful digital examination between the thumb and index-finger. As no sign of a stone could be detected by touch, a fine needle was employed to puncture the kidney in a systematic manner. Nothing was detected by the needle. As Israel was certain that stone was present, he determined not to give up the search. Two ways were possible—either to open the pelvis and examine each calyx with a suitable sound, or to divide the parenchyma of the kidney itself, in order to give access to the finger into the pelvis and the calyces. He chose the latter, as injury to the thin wall of the pelvis of the kidney may easily leave behind a urinary fistula. He therefore incised the kidney on its convex border for a distance of two centimetres and deepened the incision to correspond with the entire thickness of the organ until the finger penetrated through the opening into the pelvis and discovered the stone, which was then easily extracted with fine forceps. The profuse bleeding was checked by pressure for five minutes with a wad of cotton, and the wound in the kidney closed by three deep catgut sutures, which stopped the hæmorrhage. When the bleeding from the kidney had ceased, the separated fatty capsule was sewed, and also the belly wall, leaving room for a drainage-tube, which reached to the capsule. The wound healed throughout by primary union. The tube was removed on the eighth day. For the first few days there was pretty severe renal colic. The urine was mixed with blood for eight days, and then became entirely normal and free from albumin. The patient has pain no longer and feels as though born anew.

Israel passes in review the usual symptoms of renal calculus, and shows how inadequate for diagnosis each is, except palpation of the stone, which is only possible in the extremely rare cases of free-lying kidney. The pain, usually regarded as characteristic of renal colic, may be present when there is no stone. Apart from those cases in which too great acidity of the urine, with the excretion of uric acid and oxalate of lime, is sufficient without calculus formation to produce renal colic, Israel says he has seen renal colic in pyelitis, with alkaline fermentation of the urine, when there was profuse throwing off of epithelium from the pelvis of the kidney, intermixed with triple phosphates. He has also seen renal colic in the remittent hydro-nephrosis of movable kidney, when it evidently depended upon a sudden increase of fluid pressure in the pelvis of the kidney, due to temporary complete occlusion of the ureter. There are cases of long-continued and very severe renal colic in which nothing can be found *post-mortem* to explain their cause. In one case in which a patient apparently had severe renal colic

and passed urate of sodium, the cause of the pain was discovered to be a spondylitis of the middle thoracic vertebra.

Another symptom is lessening of the quantity of urine during the attacks, frequent impulse to urinate during them, and evacuation of concentrated urine. This is true of many cases, but it occurs also in painful colic from other causes, such as that from gall-stone and intestinal colic, and it may also be absent in renal colic.

Spontaneous pain in the kidney region in the intervals between attacks is a symptom of renal colic; but it occurs also in cases of beginning tuberculosis and in simple pyelitis.

Changes in the quality of the urine may be wholly absent in renal colic.

The most valuable symptom is the occurrence of blood in the urine; but it is to be considered diagnostic only when it occurs constantly or very frequently where there is no other catarrhal change, and in small quantity—often only detectable by microscopic examination. Admixture of blood in a purulent urine occurs not rarely without stone in pyelo-nephritic or pyo-nephrotic conditions of a simple or tuberculous character. Profuse bleeding at rare intervals is in favor of a tumor of the kidney; but it may occur in renal calculus.

Microliths in the urine prove nothing if present, and are frequently entirely absent.

When the clinical symptoms do not enable the surgeon to decide as to the presence of stone, Israel recommends an extra-peritoneal exploratory incision. Both anterior and posterior surfaces should be felt, the fatty capsule being separated for the purpose. He regards the operation, if done under antiseptic precautions, as free from danger. If nothing can be felt with the thumb and finger, puncture, and, in the event of that failing, incision into the kidney, as described in the case reported, should be tried. Incision into the pelvis of the kidney should be reserved for the cases in which either the stone is felt in the pelvis or is suspected, from the occurrence of sudden anuria, to be in the beginning or upper third of the ureter.

The details of the operation and the subsequent treatment may be gathered from the case reported. At the conclusion of his paper, Israel reports a case in which death followed an exploratory incision into the kidney for supposed stone. Death appears to have resulted from occlusion of the bowel.—*Berliner klin. Wochenschrift*, March 2, 1891.

REVIEWS.

PRINCIPLES OF SURGERY. By NICHOLAS SENN, M.D., Ph.D., Professor of the Principles of Surgery and Surgical Pathology in the Rush Medical College, Chicago, Ill., etc. Philadelphia: F. A. Davis, 1891.

A TREATISE upon the fundamental principles which underlie modern surgery, from the pen of so noted an author as Dr. Senn, will certainly have an unusual interest for the profession. Yet, after a careful perusal of this work, we must confess to a certain amount of disappointment, occasioned not by what the author has written, but rather by that which he has omitted. We had anticipated finding all that was latest and best in antiseptic surgery, together with Dr. Senn's views upon abdominal work, within this volume. But we find that the title should rather read "Principles of Surgical Pathology," for in the preface we observe: "In writing this book it has been my intention to keep in constant view the difference between the cellular processes as we observe them in regeneration and inflammation, and to connect the modern science of bacteriology more intimately with the etiology and pathology of surgical affections than has heretofore been done."

Dr. Senn discusses at length the processes of inflammation, necrosis and suppuration, and the various bacteria which are their causation. Septicæmia, pyæmia, erysipelas, tetanus, hydrophobia, and tuberculosis in all its forms are next considered.

Great care has been taken to make the discussion of each *disease* as full as possible, and the author certainly deserves great credit for the experimental work he has done. The surgeon who is interested in pathology, this volume cannot fail to enlighten, but we fear that the profession in general will desire a treatise devoted rather to the principles underlying the more practical subdivisions of general surgery, than one entirely pathological in its scope.

ÉTUDES SUR LA RAGE ET LA MÉTHODE PASTEUR. Par le DR. LUTAUD, Editor-in-Chief of the *Journal de Médecine de Paris*. Second edition. Paris, 1891.

DR. LUTAUD has in this volume considered very fully the pathology, causation, and treatment of rabies, both previous to and since the introduction of the method of inoculation devised by Pasteur. The opening chapters treat of the different varieties of rabies produced by the bite of the cat, dog, and wolf, together with the mortality statistics. Then follows an account of Pasteur's experiments upon the lower animals, and an exposition of the methods employed in attenuating the virus, with directions as to the mode of administration. In France, during the period from 1850 to 1872 inclusive, Dr. Lutaud finds 685 cases of undoubted hydrophobia reported. Since that time, though no exact statistics are given, he claims that the disease has increased, and especially since the introduction of Pasteur's treatment in 1886. He, however, admits that many of the cases lately reported are exceedingly doubtful. While arguing that the methods of Pasteur are based upon sound principles and have been of inestimable service to the human race, he nevertheless admits that rabies has increased to five times the number of cases reported prior to 1886, with a death-rate of over 13 per cent. The book concludes with detailed statements of the results of the inoculations in Paris and elsewhere, together with the opinions of the profession and secular press as to its utility.

CORRESPONDENCE.

PARIS.

New Method of Treatment of Pulmonary Tuberculosis.

THE appearance or announcement of the discovery of a remedy against tuberculosis, such as in the case of Koch's lymph, and the rather discouraging results

of the same, have encouraged several experimenters to make known to the scientific world various methods applied by them to that terrible disease. In this letter I shall try to review, in as short and concise a manner as possible, the principal methods advanced during the past few weeks.

Some years ago, Prof. Charles Richet, of the Faculty of Medicine of Paris, and Dr. Héricourt, demonstrated that the introduction of a certain quantity of blood obtained from an animal refractory to tuberculosis, such as a dog, to an easily tuberculized animal, would prevent, or, at least, would have a decided slowing action upon the development of tuberculosis in that animal. Two months after the peritoneal injection of the dog's blood into rabbits, with subsequent inoculations, it was found that, of the twenty-four rabbits who had received no blood, eight had died; while of the nineteen transfused animals, two only were dead. It was also found that the transfused animals gained in weight, while the others, the witness animals, lost. In proportion, the normal standard being 100, this would be represented by a gain in the transfused animals amounting to 125, and a loss in the witness, or non-transfused, to 80.

Five months later, however, the above experimenters admitted that the difference between the two lots of transfused and witness animals was equal. It is true that only one transfusion of blood was made, and had this operation been several times repeated it is probable that the results in favor of the transfused animals would have been more noticeable.

Later on, Drs. Héricourt and Richet, in another series of experiments, tried to increase the resisting power of rabbits to tuberculosis, and for this purpose they injected into the transfusion dog a great quantity of very active tubercular virus, about 20 cubic centimetres. For a few days the dog appeared normal, but a month later he looked sick and had lost weight, although his temperature remained normal. At that period 70 cubic centimetres of the dog's blood was transfused into the peritoneal cavity of three rabbits; seven days later these three transfused rabbits and three witnesses were inoculated with an active tubercular virus. Twenty-five days later, two of the witnesses had died and the weight of each rabbit, 100 being taken as the standard, was: for the three transfused animals 99, 108, 101, and for the remaining witness 78.

These favorable results have led Dr. Richet to experiment upon man; he has injected blood-serum obtained from a dog, and aseptically kept in a sealed glass tube, into several patients. Each injection was made in the dose of from 1 to 2 cubic centimetres, which was well borne by the patient. In only one case have there been any unpleasant symptoms, and no untoward results have been observed; moreover, in a therapeutical point of view, these injections appear to be very beneficial to the patients.

The first patient experimented upon presented on physical examination dulness and gurgling râles at the left apex; on the right side a sub-dulness with loud crackling râles and a quite marked congestion of the right apex with fine râles extending to the point of the scapula. Abundant muco-purulent expectoration, night-sweats, and evening temperature. Loss of appetite and marked feebleness.

The injections were begun in the middle of December and continued every two days, the quantity varying from 1 to 1½ cubic centimetres. The patient has greatly gained in strength, has no more night-sweats, has a good appetite, and has gained over five pounds in weight. As to the physical condition: On the right side there are a few sub-crepitant and crackling râles left at the apex; on the left side the gurgling has almost disappeared, and has been replaced by a cavernous respiration, the dulness has diminished in extent, while expectoration has become mucous.

The second history is that of a man fifty years of age, having had tuberculosis for three years. The physical signs indicated sub-dulness at the left apex, mucous râles in the sub-clavicular region, generalized bronchitis of the whole lung. On the right side, dulness under the clavicle, bronchial respiration, prolonged expiration with moist crackling râles. Yellowish thick sputa containing a large number of tubercle bacilli. General condition very bad, extremely feeble, with night-sweats, etc.

The patient received, first, 1 cubic centimetre of dog's serum; six days later, 2 cubic centimetres; and about every six days an equal quantity; the amount having been once, however, 4 cubic centimetres. Six weeks after the beginning of the treatment, after having received 19 cubic centimetres, the condition of the patient was as follows:

The general condition is much better; no more night-sweats; the appetite is good and the patient has increased ten pounds in weight. Cough has greatly diminished, and expectoration has become mucous and much reduced in quantity. On the right side, no more râles; on the left, a few sub-crepitant and sibilant râles at the apex. An important fact was, that a fistula-in-ano, which, before the treatment, suppurated a great deal, now gives a few drops of blood only.

A third case—a man, aged fifty-two years, suffering from laryngeal and pulmonary tuberculosis of two years' duration. The physical examination of the lungs showed on the right side a sub-dulness at the apex with bronchial respiration and fine sub-crepitant râles, the left apex being in the same condition. The larynx, on the other hand, presented a very large epiglottis, much swollen, thickened, immovable, presenting on its surface small ulcerations. In the larynx a gelatinous swelling, especially on the left side, was noticeable. Tubercle bacilli were found in the sputum.

One cubic centimetre of dog's serum was first injected, followed by an injection of 2 cubic centimetres every three days. After twenty days' treatment no great change was found in the lung. On the other hand, the epiglottis had greatly diminished in size, and it was no longer immovable, while the pain, which had been very marked during deglutition, had almost disappeared.

The last case was a man twenty-nine years of age, who presented the same lesions as the preceding patient, the treatment having the same results.

These experiments really deserve to be continued, as they possess the great advantage of not being detrimental to the patient.

Another method of administration of the blood-serum has been employed, and that is *the direct injection* of the serum into the trachea of the patient. On men these injections have proven to be absolutely without

danger. Drs. Saint-Hilaire and Coupard have injected 4 cubic centimetres of the serum from a dog, at six different sittings, into a young man of twenty-two years of age, who suffered from laryngeal and pulmonary tuberculosis, and in no instance have they observed any cough or dyspnœa following. The advantage of this method over the preceding ones is that it enables one to inject much more serum than can be done by the hypodermic method.

Prof. Lépine, from Lyons, uses, instead of dog's serum, goat's serum, as it is claimed that this animal is much less liable than the dog to tuberculosis. Dr. Lépine, however, no longer injects his serum hypodermically, as he formerly did; he now employs the intravenous transfusion, which is done very slowly, and can be easily regulated, provided the reservoir containing the liquid is not elevated too much. In this manner, by the intravenous method the physician can inject *very slowly* from 80 to even 100 cubic centimetres of the serum, and it can be repeated every two or three days.

Goat's serum is preferable to dog's serum for another reason than the one above mentioned, and that is, because it is much less injurious to the human blood-corpuscles than to that from the dog. The same animal can be bled four times in ten days, giving each time 400 grammes of blood. Twice the blood is obtained by opening the external jugular veins and twice by opening the crural veins. After each of the first three bleedings, Dr. Lépine replaces the blood withdrawn by an equal quantity of salt solution of seven per cent. strength. The blood is obtained by means of a glass canula introduced into the vein and is received in a vase placed in cold water and is defibrinated. Dr. Lépine has not yet indicated the results of his experiments by this new method.

Another method was presented at the last meeting of the Society of Biology, by Prof. Picot, of Bordeaux. This practitioner gives hypodermic injections of a liquid composed of sterilized olive oil and vaseline, holding in solution the active principle of creasote, guaicol, and iodoform. This liquid contains 0.01 gramme of iodoform and 0.05 of guaicol in each cubic centimetre. The injections are given in the cellular tissue of the scapular region. These injections produce no general symptoms except occasionally a sweat, which lasts about two hours; no hæmaturia nor albuminuria is produced; nor are there any local symptoms at the point of injection.

A post-mortem examination of three well-advanced cases of tuberculosis who had undergone these injections, indicated a drying-up of the pulmonary cavities, in which no more caseous material or liquid could be found. From a therapeutic point of view, these injections increased the appetite, diminished and even arrested the expectoration, prevented night-sweats, and increased the weight of the body.

In two cases, in which there was a decided pulmonary tuberculosis with cavities, the physical signs of cavity disappeared in one patient, while in the other desiccation of the cavity was manifested by a complete cessation of the râles; while in two other cases of tuberculosis of the second degree, the crackling râles totally disappeared. Fifteen patients have been treated in all, with equally good results. This practitioner declares that this method is an excellent one in the treatment of pleurisy, removing in ten to twelve days very large effusions into the pleural cavity. In a case of double pleurisy the same result was obtained without any external counter-irritation having been used.

The quantity used is from 1 to 3 cubic centimetres daily. When the patient has not reached the very last stage of the disease, marked improvement of the general and local conditions is quickly observed; cough and expectoration are rapidly diminished; the crackling râles disappear; the bacilli in the sputa diminish greatly in number, and the weight of the body greatly increases.

The results which will be obtained by these different methods cannot, of course, be indicated now. Several months of experiments and observation are necessary; for, in a disease like tuberculosis, we have no right to arrive at a hasty conclusion, such as has, unfortunately, been done in the series of experiments with Koch's famous remedy.

NEWS ITEMS.

International American Medical Congress.—Dr. Charles A. L. Reed, of Cincinnati, has indicated his intention to introduce at the meeting of the American Medical Association at Washington resolutions to the following effect, viz.:

1. That the American Medical Association extend an invitation to the profession of the Republics and Colonies of the Western Continent to assemble in this country in an International American Medical Congress.

2. That the Committee on Nominations be instructed to nominate one member for each State and Territory, and one each for the Army, Navy, and Marine-Hospital Service, to constitute a committee, with power to act, to which shall be referred time, place, and permanent organization of the proposed Congress.

There are sound reasons why such a Congress should be held. Learning always follows in the wake of commerce. The development of politico-commercial relations between this country and those of Latin America must be followed by interchange of literature and science. Medicine will be pushed forward by necessities arising out of commerce. Naval hygiene, quarantine, epidemiology, and the relation, through bacteriology, of these to all other departments of medicine, raises a communal interest between the countries of the two Americas on all subjects which could come before a medical Congress. Interests in medical education might be reciprocally conserved by bringing the Anglo-Spanish profession closer together. Dr. Reed's personal correspondence with Central and South America indicates a favorable disposition there toward the proposed Congress.

Obituary.—DR. THOMAS BAIRD REED, Attending Surgeon to the Presbyterian Hospital, and Attending Physician to Girard College Hospital, Philadelphia, died, after an illness of three days, on the evening of April 1st. The immediate cause of death was uræmia, an old nephritis having been aggravated by the passage of a renal calculus. Dr. Reed was born in Washington, Pennsylvania, in 1834, and after a good common-school education graduated from Washington College in 1852.

Soon after taking his degree of A. B., Dr. Reed matriculated at Jefferson Medical College, from which institution he received his degree of M.D. in March, 1859. He was immediately thereafter appointed a Resident Physician in the Pennsylvania Hospital, and served in that capacity the full term of one year and six months. Upon leaving the hospital in May, 1861, he was commissioned Major and Surgeon of the Second Pennsylvania Reserves, with which regiment he went to the front, where, for brilliant professional services, as well as for gallant conduct in several important engagements, he was rapidly promoted to the positions of Brigade and Division Surgeon, and finally became Medical Director of the Army of the Potomac. While engaged in military practice Dr. Reed planned and built many large military hospitals in cities where his corps had their base lines. After being mustered out of the army at the close of the war with the brevet of Colonel, he began private practice in Philadelphia. Upon the organization of the Presbyterian Hospital, in 1871, Dr. Reed was elected an Attending Surgeon, and faithfully served this institution in that capacity until the day of his death.

In addition to his private duties, he was, for more than twenty-five years, medical examiner for the Philadelphia office of the Mutual Life Insurance Company of New York. Dr. Reed was a Fellow of the College of Physicians of Philadelphia, a member of the Association of Ex-Resident Physicians of the Pennsylvania Hospital, and of the Military Order of the Loyal Legion.

In his social, as well as professional life, he had hosts of friends, and to the younger members of the medical profession he always willingly gave advice and assistance. His loss is one that will be keenly felt by all those who knew him.

Resolutions on the Death of Dr. T. B. Reed.—At a meeting of the medical staff of the Presbyterian Hospital, held April 6, 1891, the following resolutions were offered and unanimously accepted:

"Inasmuch as it has pleased our Heavenly Father to remove from our midst our personal friend and late colleague, Dr. Thomas B. Reed, it becomes us, his fellow associates in the Presbyterian Hospital, to take some action in recognition of his former position and his valuable personal relations with each one of us, as well as his interested and efficient services to the institution he so loved and served.

"*Therefore be it Resolved*, That in his death this Board has lost one of its most efficient advisers. Endowed with a strong personality, conscientious in the performance of the simplest duty, painstaking, devotedly interested in behalf of any patient submitted to his care, thoroughly equipped by a long experience in the management of hospitals in the army, he brought to bear upon all his professional and hospital duties such qualities as are rarely associated in a single individual.

"*Resolved*, That we tender to his family an expression of our heartfelt sympathy in this their hour of bereavement and trial."

Upon motion it was decided to enter these resolutions upon the minutes of the meeting, to transmit a copy to the family of Dr. Reed and to the Trustees of the Presbyterian Hospital, and to publish them in the Philadelphia medical papers.

DR. L. S. MCMURTRY, of Louisville, Kentucky, President of the Southern Surgical and Gynecological Association, delivered two lectures before the Alumni Association of the College of Physicians and Surgeons, Baltimore, at the College Building, cor. Calvert and Saratoga Streets, on Saturday evening, April 11th, at 8 o'clock, and on Monday afternoon, April 13th.

His subject was "The Pathology, Diagnosis, and Treatment of Ectopic Gestation."

Congress of American Physicians and Surgeons.—Preliminary programme of the American Association of Andrology and Syphilology. The following papers have been promised:

"A Review of the Evidence of the Transmission of Syphilis to the Third Generation." By Abner Post, M.D., of Boston.

"Relation of Syphilis to Stricture of the Rectum." By R. W. Taylor, M.D., of New York.

"Surgery of the Ureter." By A. T. Cabot, M.D., of Boston.

"Some Experience with Suprapubic and Perineal Drainage, Temporary and Permanent, in Vesical Disease." By Edward L. Keyes, M.D., of New York.

"Some Cases Illustrating Urinary Retention from Unusual Causes." By Francis S. Watson, M.D., of Boston.

"On the Radical Cure of Urethral Stricture by Restoration of the Mucous Membrane to the Normal Condition." By John P. B. Bryson, M.D., of St. Louis.

"Observations upon the Syphilitic Cachexia." By J. Blake White, M.D., of New York.

"An Obscure Case of Chronic Non-specific Urethritis of Sixteen Years' Standing." By George E. Brewer, M.D., of New York.

"New Methods for the Treatment of Urethral Disease Effected by the Use of the Speculum." By F. Tilden, M.D., of New York.

"Rupture of the Bladder." By A. T. Cabot, M.D., of Boston.

"Encysted Stone, Complicated with Growths of the Bladder." By C. H. Mastin, M.D., of Mobile.

"Short Note on a Case of Urinary Tuberculosis Treated by the (Koch) Subcutaneous Method." By Edward L. Keyes, M.D., of New York.

"On the Use of Salicylic Acid in the Treatment of Certain Forms of Cystitis." By John P. Bryson, M.D., of St. Louis.

"The Dry Poultice in the Treatment of Epididymitis." By George E. Brewer, M.D., of New York.

"Exhibition of an Antiseptic Syringe for Hypodermic Medication." By J. Blake White, M.D., of New York.

"On the Occurrence of Nephritis in Early Syphilis." By J. A. Fordyce, M.D., of New York.

The Prevention of Narcotic Inebriety.—At a meeting of the American Association for the Cure of Inebriety, held February 18th at the Academy of Medicine, New York, Dr. J. B. Mattison, of Brooklyn, offered the following preamble and resolutions:

Whereas, a leading cause of morphinism, chloralism, and cocainism is the facility with which morphine, chloral, and cocaine can be procured from pharmacists; and

Whereas, the refilling of prescriptions containing

these drugs is a potent factor in the rise and growth of these diseases:

Therefore be it Resolved, as the sense of this Association, that no retail druggist should sell morphine, chloral, or cocaine, except on a physician's prescription, and that no prescription containing morphine, chloral, or cocaine should be refilled except on the written order of a physician.

These were unanimously adopted, and a committee consisting of Drs. Mattison, Crothers, and Wright, was appointed to secure legislation in accordance with the resolutions.

Number of Students in the German Universities.—The *Wiener klinische Wochenschrift* states that during the present semester there are the following number of students in each of the Universities of Germany:

Berlin	5527	Freiberg	931
Leipsic	3458	Gottingen	890
Munich	3382	Marburg	855
Wurzburg	1544	Griefswald	773
Tubingen	1250	Konigsberg	680
Breslau	1246	Jena	640
Bonn	1219	Geissen	549
Ehrlingen	1054	Kiel	489
Heidelberg	970	Munster	385
Strasburg	947	Rostock	371

The whole number of students in Germany amounts to 28,762.

A Legal Absurdity.—The following is taken from the *London Medical Recorder*: "A curious case came before the New York City Court last week, with a still more than curious termination. A gentleman discharged a wet-nurse because she went out at night, and on this and other grounds was not satisfactory to him. The nurse brought suit for breach of contract, and asserted that as long as she supplied the infant with good milk, the father had no right to dismiss her. A pair of healthy-looking twins was produced in court as evidence of the superior lactogenetic capacity of the wet-nurse, whatever might be the irregularity of her habits or the delinquencies of her morals. The jury rendered a verdict for the plaintiff, and awarded her the full amount of her salary according to her alleged contract. This may be good law, but it is not good sense, and the decision will certainly discourage the employment of wet-nurses, already a notoriously uncomfortable addition to the family circle. A bottle is much more amenable to reason, and is far less expensive."

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 31 TO APRIL 13, 1891.

By direction of the President, the following-named officers are detailed for duty under the Inter-Continental Railway Commission, appointed under a provision in the Act of Congress approved July 14, 1890, for the purpose of making "a preliminary survey for information in respect of a continental railway recommended by the International American Conference," and they will report in person to the Commission in this city accordingly: EDGAR L. STEEVER, *Captain*, Third Cavalry; STEPHEN M. FOOTE, *First Lieutenant*, Fourth Artillery; LYMAN W. V. KENNON, *First Lieutenant*, Sixth Cavalry; ANDREW S. ROWAN, *First Lieutenant*, Ninth Infantry; SAMUEL REBER, *Second Lieutenant*, Fourth Cavalry; and CHARLES A. HEDEKIN, *Second Lieutenant*, Third Cavalry. WILLIAM C. SHANNON, *Captain and Assistant Surgeon*, for duty as Medical Officer of the party to which he may be attached.—Par. 9, *S. O. 73, Headquarters of the Army, A. G. O., Washington*, April 1, 1891.

HUNTINGTON, DAVID L., *Major and Surgeon*.—On being relieved by Henry G. Burton, Captain and Assistant Surgeon, from duty at San Diego Barracks, Cal., will report in person to the commanding officer St. Francis Barracks, St. Augustine, Florida, for duty at that post, reporting by letter to the commanding general Division of the Atlantic.—Par. 5, *S. O. 71, Headquarters of the Army, A. G. O.*, March 30, 1891.

BURTON, HENRY G., *Captain and Assistant Surgeon*.—Now at San Diego, Cal., on sick-leave of absence, is relieved from further duty at Vancouver Barracks, Wash., and will report in person to the commanding officer San Diego Barracks, Cal., for duty at that post, relieving David L. Huntington, Major and Surgeon, and reporting by letter to the commanding general Department of Arizona.—Par. 5, *S. O. 71, Headquarters of the Army, A. G. O.*, March 30, 1891.

By direction of the Acting Secretary of War, JOSEPH B. GIRARD, *Major and Surgeon*, is relieved from duty at Fort Lowell, Arizona Territory, to take effect upon the withdrawal of the troops from that post, and will report in person to the commanding officer, Alcatraz Island, Cal., for duty at that station, reporting by letter to the commanding general Department of California.—Par. 5, *S. O. 70, Headquarters of the Army, A. G. O., Washington*, March 28, 1891.

By direction of the Acting Secretary of War, JOHN VAN R. HOFF, *Captain and Assistant Surgeon*, now in New York City on leave of absence, is assigned to duty as an additional member of the Board of Medical Officers constituted by Par. 18, S. O. 52, March 7, 1891, from this office, to meet in New York City, for the examination of candidates for admission to the Medical Corps of the Army, etc.—Par. 6, *S. O. 78, A. G. O., Washington*, April 7, 1891.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FOR THE THREE WEEKS ENDING APRIL 4, 1891.

WYMAN, WALTER, *Surgeon*.—To inspect Delaware Breakwater Quarantine Station, March 27, 1891.

PURVIANCE, GEORGE, *Surgeon*.—Detailed as Chairman of Board of Examiners, April 3, 1891.

SAWTELLE, H. W., *Surgeon*.—To proceed to Rockland, Me., on special duty, March 25, 1891.

GASSAWAY, J. M., *Surgeon*.—Granted leave of absence for five days, April 2, 1891.

GODFREY, JOHN, *Surgeon*.—Detailed as member of Board of Examiners, April 3, 1891.

IRWIN, FAIRFAX, *Surgeon*.—Detailed as Recorder of Board of Examiners, April 3, 1891.

PECKHAM, C. T., *Passed Assistant Surgeon*.—Granted leave of absence for ten days, March 26, 1891.

WASDIN, EUGENE, *Passed Assistant Surgeon*.—Granted leave of absence for thirty days, March 27, 1891.

STIMPSON, W. G., *Assistant Surgeon*.—To proceed to Charleston, S. C., for temporary duty, March 26, 1891.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will be liberally paid for upon publication, or 250 reprints will be furnished instead of payment, provided request for reprints be noted by author at top of manuscript. When necessary to elucidate the text, illustrations will be provided without cost to the author.

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